INVESTIGATING THE DETERMINANTS OF FOREIGN PORTFOLIO INVESTMENTS IN EMERGING MARKETS

by

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ABSTRACT
This study explored the determinants of foreign portfolio investment (FPI) in emerging markets, using panel data analysis. In all three models, main data analysis using the dynamic generalized methods of moments (GMM) approach showed that FPI was positively and significantly by its own lag. This result confirms the view in the literature (Barrell and Pain. 1999; Wheeler and Mody. 1992; Saini. 2000), which argues that existing foreign investors attract other foreign investors as a result of the positive spillovers that they generate. Financial development also had a positive and a significant effect on FPI in all the three models under the fixed effects, random effects and the fully modified ordinary least squares (FMOLS). Moreover, a significant positive relationship running from financial development towards FPI was also detected in model 1 under the pooled OLS method. The findings resonate with those of Bartels et al. (2009), whose study observed that financial markets improve international mobility of capital through their ability to make use of timely, cheaper and efficient to prospective foreign investors. Model 2 produced results that showed that the impact of financial development on FPI was significantly negative under the pooled OLS approach, in line with Gordon and Gupta's (2004) findings.

Trade openness positively affected FPI in a significant manner under the FMOLS, random and fixed effects in all the three models. Similar results were observed in model 1 and 3 under the pooled OLS approach. These results agree with Dobbs et al (2013) that openness to trade addresses any obstacles that might hinder the movement of international capital from one country to another. The complementarity between openness to trade and financial development had a significant negative impact on FPI in all the three models under the random effects, fixed effects and FMOLS. This result is similar to Al-Smadi's (2018) finding that foreign investors can easily sell off their investments if financial markets are developed and liquid, especially in the presence of high levels of trade openness that facilitates the movement of capital across country borders (Dobbs et al. 2013). In contrast, model 2 under the pooled OLS showed that the combination between financial development and trade openness had a positive significant effect on FPI. This finding agrees with literature which notes that both trade openness and financial development separately and individually enhance FPI. The expectation therefore is that the combination of trade openness and financial development in a particular single country leads to greater FPI inflows.

In model 1, the FMOLS, random and fixed effects showed that exchange rates had a significant positive impact on FPI, something that was found in all three models under the pooled OLS approach. This finding supports Haider et al.'s (2016) argument. Models 1, 2 and 3 showed a significant positive relationship running from economic growth to FPI under the fixed effects, FMOLS and pooled OLS econometric estimation techniques. Similar results were observed in models 1 and 2 under the random effects approach. The finding echoes Al-Smadi's (2018) argument on the relationship between economic growth and FPI. In contrast, the dynamic GMM method showed that economic growth had a negative significant impact on FPI, supporting Leong and Wickramanayake's (2004) argument that in the presence of high levels of economic growth, local investors prefer to

buy back domestic securities from foreign investors, triggering a deleterious effect of FPI inflows.

In model 1, the impact of savings on FPI was found to be significantly negative under the fixed effects, random effects, pooled OLS and FMOLS approaches. Similar results were found in model 2 under the random effects and the pooled OLS. These findings contradict the available literature (Masood and Mohsin. 2002; Abdelhafidh. 2013; Ferreira and Laux. 2009) but are similar to those of Al-Smadi (2018), who argues that higher levels of inflation wipe out the value of not only return on capital but also of the original capital invested. Inflation had a significant negative effect on FPI in models 1 and 2 under the pooled OLS approach. Human capital development had a significant positive influence on FPI in models 1 and 2 under the pooled OLS and the dynamic GMM approaches. This result supports Dunning's (1988) argument that locational advantages exert a significant influence on foreign direct investment or any form of foreign investment. Human capital development was found to be a locational advantage for foreign investment in this case, as Tsaurai (2017a) found.
Keywords: FPI; Emerging Markets; Panel Data Analysis

OPSOMMING

In hierdie studie is die bepalers van buitelandse portefeuljebelegging (BPB) in ontluikende markte aan die hand van ’n paneeldataontleding verken. In al drie die modelle het ’n hoofdataontleding volgens die benadering van dinamiese, veralgemeende metodes van momente (VMM) aangetoon dat sy eie vertraging BPB positief en opmerklik beïnvloed. Hierdie uitslag onderskryf die bevindings in die literatuuroorsig (Barrell & Pain 1999; Wheeler & Mody 1992; Saini 2000). Hiervolgens word aangevoer dat bestaande buitelandse beleggers ander buitelandse beleggers deur hulle positiewe surplusse aanlok. Ook finansiële ontwikkeling het in al drie die modelle onder die benadering van vaste en ewekansige effekte en volgewysigde gewone kleinste kwadrate (VGGKK) ’n positiewe en opmerklike effek op BPB gehad. Daarby is ’n opmerklik positiewe verband, wat van finansiële ontwikkeling tot BPB strek, onder die saamgevoegde gewone kleinstekwadrate- oftewel GKK-metode in model 1 bespeur. Hierdie bevinding staaf dié van Bartels et al (2009) dat finansiële markte die internasionale mobiliteit van kapitaal verbeter deurdat hulle tydig goedkoper en doeltreffende inligting aan voornemende buitelandse beleggers verstrek. Die uitslag van model 2, dat die uitwerking van finansiële ontwikkeling op BPB onder die saamgevoegde GKK-benadering opmerklik negatief is, strook met die bevindings van Gordon en Gupta (2004).

Oop handel het BPB onder die VGGKK, ewekansige en vaste effekte in al drie die modelle op ’n opmerklike wyse positief geaffekteer. Soortgelyke uitslae is in model 1 en 3 onder die saamgevoegde GKK-benadering waargeneem. Hierdie uitslae stem ooreen met dié van Dobbs et al (2013), naamlik dat oop handel baie hindernisse uit weg ruim wat die beweging van internasionale kapitaal van een land na ’n ander belemmer. Die komplementariteit tussen oop handel en finansiële ontwikkeling het ’n opmerklik negatiewe uitwerking op BPB in al die modelle onder die benadering van ewekansige effekte, vaste effekte en VGGKK gehad. Hierdie uitslag klop met Al-Smadi (2018) se bevinding dat buitelandse beleggers hulle beleggings maklik van die hand kan sit as finansiële markte ontwikkeld en likied is, en in die besonder as handel in hoë mate oop is en kapitaal met gemak oor landsgrense heen kan beweeg (Dobbs et al 2013). In teenstelling hiermee het model 2 onder die saamgevoegde GKK getoon dat die kombinasie van finansiële ontwikkeling en oop handel ’n opmerklik positiewe effek op BPB het. Hierdie bevinding stem ooreen met dié in die literatuur dat oop handel en finansiële ontwikkeling gesamentlik en afsonderlik BPB aanwakker. Dienooreenkomstig word verwag dat oop handel en finansiële ontwikkeling groter BPB na in ’n land sal laat vloei.

Die VGGKK en ewekansige en vaste effekte het in model 1 getoon dat wisselkoerse ’n opmerklik positiewe uitwerking op BPB gehad het. Dit het trouens in al drie die modelle onder die saamgevoegde GKK-benadering voorgekom. Hierdie bevinding beaam Haider et al (2016) se argument. Model 1, 2 en 3 het ’n opmerklik positiewe verband, wat van ekonomiese groei tot BPB strek, onder die vaste effekte, VGGKK en saamgevoegde GKK ekonometriese ramingstegnieke aangedui. Soortgelyke uitslae is in model 1 en 2 onder die benadering van ewekansige effekte waargeneem. Hierdie bevinding sluit aan by Al Smadi (2018) se argument oor die verband tussen ekonomiese groei en BPB. Hierteenoor het die dinamiese GMM-metode getoon dat ekonomiese groei ’n negatiewe,

opmerklike uitwerking op BPB gehad het. Dit staaf Leong en Wickramanayake (2004) se argument dat plaaslike beleggers verkies om binnelandse sekuriteite by buitelandse beleggers terug te koop as ’n hoë mate van ekonomiese groei aanwesig is, en dat dit ’n nadelige effek op die invloei van BPB het.

In model 1 was die uitwerking van spaargeld op BPB opmerklik negatief onder die benadering van vaste effekte, ewekansige effekte, saamgevoegde GKK en VGGKK. Soortgelyke resultate het in model 2 voorgekom onder die ewekansige effekte en die saamgevoegde GKK. Ofskoon hierdie bevindings strydig met dié in die beskikbare literatuur is (Masood & Mohsin 2002; Abdelhafidh 2013; Ferreira & Laux 2009), strook dit met dié van Al-Smadi (2018) wat beweer dat hoë inflasie nie alleen die opbrengs op kapitaal nie, maar ook die oorspronklike kapitaal uitwis. Inflasie het ’n opmerklik negatiewe effek op BPB in model 1 en 2 onder die saamgevoegde GKK- en dinamiese VMM-benadering gehad. Die ontwikkeling van menslike kapitaal het ’n beduidend positiewe invloed op BPB gehad in model 1 en 2 onder die saamgevoegde VKK- en die dinamiese VMM-benadering. Hierdie uitslag beaam Dunning (1988) se argument dat landsgebonde voordele ’n beduidende invloed op direkte buitelandse belegging of enige ander vorm van buitelandse belegging uitoefen. Tsaurai (2017a) het bevind dat die ontwikkeling van menslike kapitaal in hierdie geval ’n landsgebonde voordeel vir buitelandse belegging inhou.

Kernbegrippe: BPB, ontluikende markte, paneeldataontleding

NGAMAFUPHI

Lolu cwaningo luye lwaphenya izizathu zokutshalwa kwezimali emazweni angaphandle, phecelezi (*foreign portfolio investment (FPI)* ezimakethe ezisafufusayo, ngokusebenzisa uhlelo lokuhlaziywa kwedatha, phecelezii-*panel data analysis*. Kuwo onke amamodeli omathathu, kuhlelo lokuhlaziywa kwedatha esemqoka, ngokusebenzisa izindlela eziguquguqukayo zezikhathi ezahlukene (GMM) , lokhu kuye kwakhombisa ukuthi i-FPI yathola umthelela omuhle futhi okungumthelela wayo wokushiywa yisikhathi. Lo mphumela uqinisekisa ulwazi olutholakele olumayelana nokubuyekezwa kombhalo wobuciko (Barrell & Pain 1999; Wheeler & Mody 1992; Saini 2000), okuwumbhalo okhuluma ngokuthi abatshalizimali bangaphandle abakhona baheha abanye abatshalizimali bangaphandle okuyinto edalwa yizinzuzo ezinhle ezingumphumela wokutshalwa kwezimali. Ukuthuthukiswa kwezinhlelo zezimali nakho kube nomthelela omuhle nobalulekile kwi-FPI, kuwo wonke amamodeli amathathu, angaphansi kwesimo semiphumela enqunyelwe isikhathi, angaphansi kwemiphumela yazo zonke izinhlelo eziguqulwe ngokugcwele phecelezi *fully modified ordinary least squares (FMOLS)* . Ngaphezu kwalokho, ubudlelwano obuhle obusemqoka, obuqala ekuthuthukisweni kwezinhlelo zezimali ukuya kuhlelo lwe-FPI, nabo lobudlelwano buye babonakala kumodeli 1, ngaphansi kohlelo lwe *pooled OLS method*. Ulwazi olutholakele lufana nalolo lukaBartels et al. (2009), lapho ucwaningo lwakhe lwathola ukuthi izimakethe zezimali zithuthukisa ukuthunyelwa kwezimali emhlabeni ngekhono lokusebenzisa ulwazi lwalo ngesikhathi, ngentengo ephansi futhi ulwazi olufanele, lolu lwazi luthunyelwa kubatshalizimali bangaphandle abathembisayo. Imodeli 2 ikhiqize iveze imiphumela ethi umthelela wokuthuthukiswa kwezinhlelo zezimali ohlelweni lweFPI luye lwabonakala lulubi kakhulu ngaphansi kohlelo lwe*pooled OLS approach*, lokhu kuhambisana nolwazi olutholwe nguGordon kanye noGupta (2004).

Uhlelo lwezokuhwebelana oluvulekile luye lwaba nomthelela omuhle ohlelweni lweFPI, ngendlela esemqoka kakhulu, ngaphansi kohlelo lweFMOLS, ngaphansi kohlelo lwemiphumela enqunyelwe isikhathi nohlelo olunganqunyelwanga isikhathi, kuwo wonke amamodeli amathathu. Imiphumela efana naleyo yatholakala kumodeli 1 neye 3, ngaphansi kohlelo lwe*pooled OLS approach*. Le miphumela ihambisana naleyo kaDobbs et al. (2013), yona ngile elandelayo; uhlelo oluvulekile lokuhwebelana luyisisombululo sanoma yiziphi izihibe ezingaphazamisa ukuthunyelwa kwezimali emhlabeni ukusuka kwelinye izwe ukuya kwelinye. Ukusebenzisana phakathi kohlelo lokuhweba oluvulekile kanye nohlelo lwezokuthuthukiswa kwezinhlelo zezimali kuye kwaba nomthelela ongemuhle kwiFPI, kuwo wonke amamodeli omathathu, ngaphansi kwemiphumela enganqunyelwanga isikhathi, imiphumela enqunyelwe isikhathi kanye nakwihlelo lweFMOLS. Lo mphumela ufana nalowo ka-Al-Smadi's (2018) othi abatshalizimali bangaphandle bangatshala kalula izimali zabo uma izimakethe zezimali zithuthukile futhi zinemali elingene, ikakhulukazi uma kukhona amazing aphezulu wohlelo oluvulekile lokuhwebelana, okungamazinga ahola uhlelo lwezokuthunyelwa kwezimali ngaphesheya kwemingcele yamazwe (Dobbs et al. 2013). Okuphikisana nalokhu, imodeli 2, ngaphansi kohlelo lwe*pooled OLS*, luye lwakhombisa ukuthi ukuhlanganiswa kohlelo lwezokuthuthukiswa kwezinhlelo zezimali kanye nohlelo oluvulekile lwezokuhwebelana kuye kwaba nomthelela omuhle kakhulu kwiFPI. Lolu lwazi olutholakele luvumelana

nombhalo wobuciko, wona oshoyo ukuthi zombili lezi zinhlelo uhlelo oluvulekile kwezohwebo kanye nokuthuthukiswa kwezinhlelo zezimali, ezehlukene kanye nalezo ezizimele ngayinye, ziqinisa uhlelo lweFPI. Ngalokho, okulindelwe, ukuthi umbimbi oluxuba uhlelo oluvulekile lwezokuhwebelana kanye nezinhlelo zokuthuthukiswa kwezimali, ngandlelathize,, ezweni elilodwa, ziholela izinga eliphezulu lokungena kweFPI.

Kumodeli 1, uhlelo lweFMOLS, imiphumela enganqunyelwe naleyo enqunyelwe isikhathi iye yabonisa ukuthi amazinga okushintshelana ngezimali abe nmothelela omuhle kakhulu kwiFPI; okuyinto etholakele kuwo wonke amamodeli omathathu angaphansi kohlelo lwe *pooled OLS*. Lolu lwazi olutholakele luxhasa umbono kaHaider et al's (2016. Amamodeli Models 1, 2 kanye neye 3 ziye zakhombisa ubudlelwano obuhle kakhulu obuqala ekuthuthukisweni kwezomnotho ngokohlelo lwe FPI, ngaphansi kwesimo semiphumela enqunyelwe isikhathi, ngaphansi kohlelo lwe FMOLS kanye nasohlelweni lwe *pooled OLS* okuyindlela esetshenziswa ukulinganisa izinga lokuhluma komnotho. Imiphumela efana nayo le iye yatholakala kumodeli 1 kanye nakumodeli 2, ngaphansi kwemiphumela enganqunyelwe sikhathi. Ulwazi olutholakele luveza imibono ka-Al-Smadi (2018) mayelana nobudlelwano obuphakathi kokuhluma komnotho kanye nohlelo lwe FPI. Okuphikisana nalokho, indlela eguquguqukayo iGMM iye yakhombisa ukuthi ukuhluma komnotho kuye kwaba nomthelela omubi kakhulu kwi FPI, uxhasa umbono ka Leong kanye no Wickramanayake (2004) othi, uma kunamazinga aphakeme okukhula komnotho, abatshalizimali basekhaya bathanda ukuthenga amasheya amabhizinisi asekhaya kubatshalizimali bangaphandle, lokho kuba nomthelela omubi kakhulu ekungeneni kwe FPI.

Kumodelil 1, umthintela wokongiwa kwezimali ohlelweni lwe FPI watholakala ukuthi ube nomthelela omubi kakhulu, ngaphansi kwesimo semiphumela enqunyelwe isikhathi, kwemiphumela enganqunyelwanga isikhathi, ohlelweni lwe *pooled OLS* kanye nasezinhlelweni ze *FMOLS*. Imiphumela efana nayo le iye yatholakala kumodeli 2, ngaphansi kwemiphumela enganqunyelwe kanye naleyo enqunyelwe isikhathi kanye nasohlelweni lwe *pooled OLS*. Lolu lwazi olutholakele luphikisana nolwazi lombhalo wobuciko okhona (Masood & Mohsin 2002; Abdelhafidh 2013; Ferreira & Laux 2009), kanti futhi le miphumela ifana naleyo ka-Al-Smadi (2018), yena oshoyo ukuthi amazinga aphezulu amandla emali akaqedi kuphela inzuzo yokutshalwa kwezimali, kodwa aqeda nemali yokuqala etshaliwe. Amandla email aye aba nomthelela omubi kakhulu kwi FPI, kumodeli 1 kanye nnakumodeli 2, ngaphansi kohlelo lwe *pooled OLS*. Ukuthuthukiswa kwamagugu ayikhono nezingqondo zabasebenzi aye aba nomthelela omuhle ohlelweni lwe FPI, kumamodeli 1 kanye nakumodeli 2, ngaphansi mkohlelo lwe *pooled OLS* kanye nezindlela eziguquguqukayo ze GMM. Lo mphumela uxhasa umbono kaDunning (1988) othi izinzuzo zendawo ziba nomthelela omuhle kakhulu ohlelweni oluqondile lwezokutshalwa kwezimali emazweni angaphandle noma ngiluphi uhlelo lwezokutshalwa kwezimali emazweni angaphandle. Ukuthuthukiswa kwamagugu angamakhono kanye nemibono yabasebenzi kuye kwatholakala kuyinzuzo yendawo ekutshalweni kwezimali emazweni angaphandle kulesi simo, njengoba lokhu kuye kwatholakala kuTsaurai (2017a).

Amagama asemqoka: uhlelo lwe FPI; izimakethe ezisafufusayo, uhlelo lokuhlaziya lwephaneli

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DEDICATION

This dissertation is dedicated to my mother Zandile Ngwenya and to my colleagues, all of whom taught and inspired me to achieve results through hard working.

DECLARATION

43497233

I, Rejoyce Ngwenya, certify that this dissertation which is submitted to the University of South Africa, Pretoria, is a product of my own work. I also declare that all the sources used have been cited and acknowledged by means of complete references.

Signed…….....Date……..

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CHAPTER 1: INTRODUCTION TO THE STUDY

1.1 BACKGROUND

Several variables are behind the capital flows to developing countries, for example, the increase in private investment inflows into Mexico in the early 1990s which was coupled with a decrease in global interest rates. According to Abbott and De Vita (2011), the period of foreign capital inflows led to the financial crisis in Mexico. In comparison, capital flows to Asia were driven by rapid economic growth and as a result Asia was protected against global financial sentiments. Moreover, domestic investment projects' below par performance had a significant influence on the financial crisis that unfolded in 1997. Both the Mexican and the Asian crises saw large reversals in short-term capital such as foreign portfolio investment. Whilst domestic performance of the economy may have an influence on the movement of capital, global interest rate changes to a larger extent determine the fluctuations of private capital flows into the emerging markets (Ahmed and Zlate. 2014).

Although capital flows to emerging countries were moderate before 1998, the period of massive foreign capital inflows before year 1998 can be distinguished and became greater after the Russian crisis. Foreign capital inflows into emerging, developing and developed markets increased substantially due to rapid economic growth experienced in these countries in recent years. Consistent with Batten and Vo (2010), foreign portfolio flows have been more volatile in comparison to foreign direct investment (FDI).

Variables attracting capital inflows to emerging markets vary from the ones relevant for developing countries. Slow pace of economic reforms and volatile political situation have shaped private investment inflows to emerging markets. However, it is still not clear how world financial systems have affected these foreign capital flows, especially those related to foreign portfolios. While factors responsible for FDI in emerging and developing markets have been researched extensively, portfolio investment flows have found little explanation (Ghosh et al. 2015). Huge portfolio investment swings normally characterize financial problems hence defining the determinants of FPI helps us to understand the

possible sources of financial crises in emerging markets, particularly their susceptibility to these sources.

Foreign capital flows analysis was given more attention in the case of developing countries due to the frequency of currency crises in developing countries (Mexican and the Asian crises). This was noted in a study by Calvo, Leiderman and Reinhart (1993) who focused on the determinants of FPI in developing and developed countries. Sula and Willett (2009) also studied the key variables influencing foreign capital outflows from the Asia and Mexico. Their study included a variety of variables has the potential of having a significant influence on foreign capital flows. The variables influencing foreign capital flows were usually categorized as global, external or domestic (Chuhan, Claessens and Mamingi. 1998). The current study contributes to the literature on FPI to emerging markets by broadening up an understanding on the variables that drives international foreign capital flows to the emerging markets, consistent with Mukherjee (2015).

In line with Tobin-Markowitz framework, the variables influencing foreign capital flows can be categorized into four classes (Loayza, Fajnzylber and Calderon. 2004). These are (1) diversification, (2) the extent of co-movement between global returns, (3) investments' perceived risk and (4) the investment return in the home country in comparison to the international arena. These determinants may generally be classified as country-specific or global factors and their understanding is quite critical as they provide key indicators for policy decision making purposes. How sensitive the foreign capital flows to the external variables determine how susceptible the capital investments are to the developments in the global capital market. High sensitivity means that shocks to world financial markets require the implementation of suitable adjustment plans to keep targeted economic indicators in specified ranges (Hobza and Zeugner. 2014).

Decisions taken by foreign investors to invest in home countries rely on factors such as political stability, economic growth and social stability of the country in question. The most important action is to explore the economic variables that attract foreign investors into a particular country. FPI is a common phenomenon studied due to its short-term and volatile

nature in comparison to FDI. Although FPI brings handsome returns, host country foreign investment inflows into the host country is a reliable and steady source of income and helps the host country to fulfil its capital needs. Daly and Vo (2013) argue that there is a high likelihood that foreign investors are most inclined to invest in their own local market (home biasness).

In line with the international finance theory, FPI flows happen due to the desire by foreign investors to invest in a wide number of countries for two reasons, namely achieving higher returns and for risk diversification reasons. Available studies done by Solnik (1974), Levy and Sarnat (1970) and De Santis and Gerard (1997) have documented the advantages of risk diversification on the part of foreign investors. From the host country viewpoint, foreign portfolio investment flows play a very critical role in not only bridging the savings–investment gap but also availing the much required foreign currency for financing current account deficits. It is against this reason that developing nations the world over have relentlessly been making frantic attempts to lure foreign capital in order to enhance financial development and economic growth. Obstfeld (2009) also well documented the benefits of foreign capital inflows to the host country. The removal of foreign trade controls on foreign financial assets is behind the increase in the international capital mobility in the last 20 years, in line with (Alberola et al. 2016).

Previous research shows that foreign portfolio equity inflows into developing countries went up fivefold, to US$ 67 billion in 2005 from US$ 14 billion in 2000 and nine-fold to US$ 128 billion in 2010. Among developing countries, South Africa, China, India, Brazil and Russia received the highest foreign portfolio equity (almost 70%). Despite the fact that these foreign portfolio equity flows brought many advantages to the developing nations, these kind of foreign portfolio flows have been a cause for concern. As compared to when investing locally, current and country risk are some of the additional factors that has to be taken into consideration when investing not only into developing countries but other countries in general. The fact that foreign portfolio inflows are susceptible to volatility and reversals is quite evident in the recent financial crises that has shown that these international capital flows expose home countries to new challenges of a macroeconomic

nature. For example, Sula and Willett (2009) noted that India was also affected by world financial markets' developments because of the greater extent to which India financial markets are linked to global financial markets.

Previous research has indicated that in 2008, foreign portfolio equity inflows into India declined significantly before it bounced back in 2009 in comparison to other developing countries. Foreign capital inflows into India went up by almost 90% between 2009 and 2010, a sign of investors' confidence in the Indian economy underpinned by resilient local fundamentals. In the context of the recent volatility in the world economy, it is now critical to get a good understanding of the factors that influence foreign capital movement in order to do away with any imbalances emanating from large inflows and outflows of foreign capital above the economy's absorptive capacity which can lead to capital crunch if not handled carefully.

Prior empirical research work by Byrne and Fiess (2016), Calvo et al (1993), Fernandez-Arias (1996) and Taylor and Sarno (1997) noted that variables such as economic growth slowdown and decline in interest rates in developed nations are responsible for pushing capital into both developing and emerging economies. Domestic factors that include credit worthiness, availability of sufficient domestic reserves and the equity index are some of the prominent variables that have been driving foreign capital to the developing countries (Felices and Orskaug. 2008; World Bank. 1997; Mody, Taylor, and Kim. 2001; Bohn and Tesar. 1996). Other researchers observed that the complementarity between external and domestic variables enhance the inflow of foreign capital into the developing and emerging markets (Chuhan et al. 1998; Montiel and Reinhart. 1999; De Vita and Kyaw. 2009).

The current study contributes to an important aspect of literature because most of the existing studies that analyses variables affecting FPI have so far concentrated on the Foreign Institutional Investments component, American Depository Receipts and Global Depository Receipts flows. On the contrary, this study explores a broader list of potential factors that determines FPI flows to emerging markets (Marin and Schnitzer. 2011).

1.2 PROBLEM STATEMENT

What has triggered a lot of interest in the determinants of foreign capital flows, FPI in particular, is the net benefit of capital flows and how critical the international allocation of capital has become. In particular, prior studies have highlighted how, investigating the factors that impact on foreign capital flows have been influenced by a whole range of host country characteristics. However, there are fewer prior studies that focused on the reasons behind the increase in foreign capital flows between the home and host countries. A case in point is after a significant decline in foreign capital flows during the world financial crisis (2008–2009), FPI flows into emerging counties went up significantly. However, the volatility and instability of the foreign capital flows is ever on the upward trend and this phenomenon attracts increasing focus by all the relevant stakeholders, in line with Ahmed and Zlate (2014). The current study seeks to deepen the understanding of the main drivers of foreign portfolio equity capital from developed nations to emerging markets by making use of a large dataset (panel data).

A number of reasons motivated the current research. Firstly, the study explores the factors that determines FPI from developed to emerging markets to fill in the void left in literature. The second reason lies in the mixed findings available in the existing literature. According to Haider et al (2016), the question on what drives FPI to emerging and developing countries although being an integral part of most recent studies, it has not yet been resolved.

A further important motivation for the study is the nature of foreign portfolio capital flows which are more sensitive to even the smallest shock in the international financial markets. In contrast to FDI, foreign portfolio capital flows sometimes do not follow the long-term profitability benefits that are expected to be enjoyed by investing in the host country. Rather, the flow of foreign portfolio capital is more often driven by speculative and short term motives, including other macroeconomic volatile considerations such as interest rate and foreign currency differentials between countries.

The majority of the literature on the determinants of FPI has ignored the dynamic characteristic and the endogeneity nature of FPI data. Channels through which some factors influence FPI have not been investigated frequently to the best of the researcher's knowledge. Moreover, this is the first comprehensive research investigating FPI determinants using emerging markets as a case study. These are the aspects in which the current study deviates from previous studies on FPI determinants.

1.3 OBJECTIVES OF THE STUDY

1.3.1 Trend analysis of the determinants of FPI in emerging markets.

1.3.2 To empirically investigate factors that determine FPI in emerging markets.

1.3.3 To investigate whether trade openness is an avenue through which financial development affect FPI in emerging markets.

1.4 RESEARCH HYPOTHESES

The following hypotheses have been developed in line with the objectives of the study.

Null hypothesis: Significant relationship does not exist between FPI inflows and financial development, human capital development, trade openness, inflation, economic growth, foreign direct investment (FDI), exchange rates, infrastructural development and savings in emerging markets.

Alternative hypothesis: Significant relationship exist between FPI inflows and financial development, economic growth, infrastructural development, trade openness, savings, FDI, inflation, human capital development and exchange rates in emerging markets.

1.5 THE SCOPE OF THE STUDY

The thesis focused on the determinants of FPI in emerging markets. Following the study's objectives, empirical research was done on the influence of the determinants of FPI on the economy of an emerging market. The study ignored other measures of financial sector development and the whole economy. Nonetheless, it did focus on the interdependence between the determinants of FPI and the economy in the case of emerging markets. The

usefulness of the results of the study is restricted to emerging markets thus the findings are not generalizable. The findings are relevant and applicable in developing nations only whose financial sector dynamics resemble those of the emerging markets. The study also explores how the determinants positively or negatively affect FPI by referring to emerging markets associated development during the period ranging from 2002 to 2016.

1.6 JUSTIFICATION OF THE STUDY

Several prior research work on the variables that affect FPI focused on East Asian and Latin American, consistent with Owusu (2012). African, emerging and developing countries have received insufficient attention when it comes to the subject on the determinants of FPI. Therefore, it is imperative to undertake a study that explore the determinants of FPI in emerging economies.

The current research study contributes to the literature on the determinants of FPI in emerging markets. Understanding the impact of portfolio investment on economic growth and what attracts portfolio investors to a country helps policy makers in statutory government agencies and their counterparts in private firms in their efforts to lure foreign capital inflows (International Monetary Fund. 2012). This study provides feedback on the determinants of FPI in emerging markets, thus policymaking authorities are then able to enhance the efficiency of FPI and identify reasons why reforms and strategies are necessary. This research provides financiers with further information about potential investment and portfolio diversification opportunities and choices about their investments especially in a scenario where the factors that affect their investments are documented and known. The main objective of this research was to contribute to literature through analyzing the variables that affect foreign portfolio inflows into emerging markets.

1.7 ABBREVIATIONS LIST

The dissertation used the following abbreviations:

Table 1: Abbreviations used in the dissertation	
FPI	FPI
FIN	Financial development
OPEN	Trade openness
EXCH	Exchange rates
SAV	Savings
INFL	Inflation
HCD	Human capital development
INFR	Infrastructural development
GDP	Gross domestic product
FDI	Foreign Direct Investment
IMF	International Monetary Fund
GMM	Generalized Methods of Moments
OLS	Ordinary Least Squares
FMOLS	Fully Modified Ordinary Least Squares
COMESA	Common Market of Eastern and Southern Africa
EU	European Union
UNCTAD	United Nations Conference on Trade and Development
ARCH	Autoregressive Conditionally Heteroscedastic
OECD	Organization for Economic Cooperation and Development

Source: Author's compilation

1.8 STRUCTURE OF THE THESIS

The thesis is organized as follows:

Chapter 1: Introductory chapter

The chapter include the background and introduction of the study. The statement of the problem, objectives of the study, the research hypotheses, the scope of the research and the justification for the study are discussed. A list of abbreviations is provided.

Chapter 2: Literature review

This chapter offers a deeper insight into the theoretical and empirical views regarding the factors that influence FPI in emerging markets. The review is discussed under sub-

sections, which cover a theoretical literature review, empirical literature, the theoretical framework of the determinants of FPI, methods of FPI and the reasons behind FPI.

Chapter 3: Research methodology

This chapter focuses on empirical model specification and estimation techniques used in the study. Specifications of the model used to test the hypothesis of the study against the outlined objectives are discussed. The proxies of all variables used in the study are explained.

Chapter 4: Pre-estimation diagnostics

This chapter focuses on mean trends of all variables for emerging markets used in this study during the period 2002 to 2016. The chapter also presents and discusses the correlation analysis and descriptive statistical results.

Chapter 5: Data analysis, results discussion and interpretation

The chapter analyses and models the variables used in the study. Modelling and test results from the various approaches are presented, analysed and assessed. The findings of the study are discussed and synthesised against literature.

Chapter 6: Conclusions, policy recommendations and areas of further study

This is the last chapter of the study and it sums up and corroborates theoretical and empirical literature postulations on determinants of FPI in emerging markets. Main sub-headings include summary of findings, contribution of the study towards the literature, conclusions and study's policy implications, study limitations and suggestions for further study.

1.9 CHAPTER SUMMARY

This chapter provides an introduction to the study of the factors that influences FPI in emerging markets and discusses the statement of the problem statement, objectives of the research and its scope. Literature is full of conflicting reasons for determinants of FPI in emerging markets and developing nations. Thus, there is a clear need for further

empirical research aimed at investing the direction of causality between FPI and its determinants. The next chapter deals with the literature review on the factors that have an impact on FPI and what that means for investors and the economy of emerging markets. It also presents and discusses the general theoretical framework of the determinants of FPI.

CHAPTER 2: LITERATURE REVIEW

2.1 CHAPTER INTRODUCTION

This chapter comprehensively discussed literature on FPI. The literature ranges from factors that determine foreign portfolio investment, methods and theories of FPI, the theoretical framework of the determinants of FPI, the determinants of FPI from an empirical literature view point and how the combined effect of trade openness and financial sector development influence FPI.

The remainder of this chapter is organized as follows: Section 2.2 discusses the reasons behind FPIs, Section 2.3 explains the methods of FPI, Section 2.4 discusses theoretical literature on the determinants of FPIs while Section 2.5 reviews the empirical literature on the factors that determines FPI. Section 2.6 explains how the interaction between financial development and trade openness influences FPI. Section 2.7 summarizes the chapter.

2.2 REASONS BEHIND FOREIGN PORTFOLIO INVESTMENT

Dobbs et al (2013) explain that FPI stands for capital invested in the host country, which provides service and manufacturing capabilities for both global markets and local consumers. The same study noted that FPI is instrumental in bringing goods and services to international markets whilst the influx of foreign investors show increased confidence in the business environment of the host country.

There are various factors that drive foreign portfolio investors to invest in foreign countries. These include trade openness, favourable exchange rate, political stability, GDP, interest rate differentials, good governance, diversification, economic growth, domestic inflation, stock market performance (market efficiency), industrial production, economic conditions, increase in foreign direct investment, financial development, regulation, higher earnings expectations, bond market, country creditworthiness and financial liberalization and globalization (Dobbs et al. 2013).

Alesina and Dollar (2000) noted that trade openness enhances competitiveness and sends the right signals to the world that the host country is committed to the implementation of sound and growth oriented economic growth policies. Donors normally are more willing to reward such countries with extending more development aid flows to them. Garg and Dua (2014) argue that capital markets liberalization leads to market openness thus allowing international investors to buy domestic financial assets.

Waqas, Nazir, and Hashmi (2015) found a significant and positive effect of exchange rate on FPIs. They argued that when a country's value of the currency goes up, it in turn decreases the returns and thus triggering the instability of FPI. The depreciation of the exchange rate leads to the outflow of capital and vice versa. On the other hand, the appreciation of the exchange rates encourages investors to invest in a country (Hisali. 2012). Investors speculate on more secure investor's rights, high returns and feel less cautious about investing in the country when the exchange rate appreciates. This results in greater efficiency, better developed infrastructure and improved investors' rights on the country's stock exchange, which paves way for increased economic growth.

Beck (2013) and Louis et al (2015) mention that stability of the political environment in the host country and higher economic growth attract investors to the country. Foreign investors are keen to ensure their funds are safe. Stability of the host country's political environment is also linked to higher expected return on investment. Foreign investors tend to move away their funds from politically unstable to politically stable nations to safeguard funds (Smimou. 2014). In line with Tsaurai and Odhiambo (2012), higher level of economic growth is an indication of rapid growth in economic activities in the host country, which in turn means higher likelihood of making profit in the corporate sector.

Boskovska (2006) observes that economic and political stability facilitates the inflow of FPI. Stability stands for the opportunity and predictability for firms have a better foresight of the future state of the macroeconomic environment. On the other hand, rioting, social turmoil and rebellion in the host country repel investments. Instability in the economy also lead to hyperinflation, which causes the domestic currency to be virtually obsolete. In

order to lure FPI, businesses and citizens, including workers must abide by the laws of the country. The same study noted that blackmail, criminal activities, kidnappings, violence and counterfeit currency and products may be problems in developing and emerging markets that undermine the efficacy of doing trading activities. The justice system in such countries must have effective and efficient mechanisms for eliminating the corrupt and rogue law enforcement agencies if foreign investment is to be attracted (Boskovska. 2006; Lensink et al. 1999).

Atobrah (2015) found a negative relationship between volatility of FPI and economic growth proxied by the growth rate of GDP in developing countries. High rate of growth and low inflation rates positively influence the profitability of corporations and thus attracting investors into that particular capital market in order to get the highest rate of returns. More the flow of FPI is responsive to interest rate differentials between the source and host country, hence investors shift their money to countries characterized by higher levels of real interest rate higher (Garg and Dua. 2014). Host country's stock market performance has an effect on the decisions made by foreign investors. An upward movement in the level of the market index shows an increase in the value of shares of listed companies and hence making the market to be more attractive to foreign investors who are seeking higher returns (Ndlovu. 2014).

Real interest rates positively influenced the volatility of FPI in Pakistan and India, both of which are developing countries (Atobrah. 2015). Interest rates change reflect the basic operation of the economy, affect economic growth variables such as price level, GDP, international balance of payments, the rate of economic growth and employment levels and so on. When interest rates go up, firms pay more in order to be able to borrow money from the financial sector. The firm might end up borrowing less in order to avoid paying more interest rate costs, thus slowing down economic activities that entirely depend on financial sector borrowing. This result in decreased earnings, which consequently negatively affect the stock price of the firm and general economic growth decline (Cavusgil, Ghauri and Akcal. 2013:7).

Rising rates of interest pushes up the investment costs thereby forcing low income earners to withdraw their investments, thus reducing the overall demand for investment. Interest rates decline is associated with a fall in investment costs, thereby stimulating investment and total social investments (Kremer, Bick and Nautz. 2013). Investment is strongly affected by interest rates because it is financed either by current savings or by borrowing. On the other hand, high interest rates in the money market offer a better return on investment as compared to keeping money in the bank savings account. Investment has a higher opportunity cost when interest rates are high because one could lose out on interest payments (Beck. 2013:437).

Abdioglu, Khurshed, and Stathopoulos (2013) argue that governance quality level in the host and home countries plays a pivotal role in the choice of country to invest in, from a foreign investor point of view. Min and Bowman (2015) mention that corporate governance lowers down the monitoring costs thus reducing the investment risk. Jain, Kuvvet, and Pagano (2017) observed that corruption level has a deleterious effect on FPI. The investor uncertainty and asymmetric information that emanates from corruption results in increased adverse selection costs which repel foreign investors from participating in the domestic financial markets. Governance levels in both host and home country influences the decision making of the foreign investors (Abdioglu et al. 2013). In this context, corruption contributes to an increase in investor uncertainty and asymmetric information which in turn chase away foreign investors from the host country (Jain et al. 2017).

Garg and Dua (2014) found that FPI allowed the foreign investors to be have an opportunity to diversify their portfolios across different countries. The nature of the diversification to a greater extent relies on the correlation between the capital markets of the source countries and those of the host countries. A lower correlation means lower co-movements between the different markets and thus more advantages derived from diversification (Garg and Dua. 2014). Moreover, Owusu (2012) postulates that risk diversification is an overwhelming factor in investors investing in a foreign country because the main aim of the investor is to overally lower down the variance of the

portfolio. If more country's assets are added helps to lower down the portfolio risk, it means there exists potential benefits from diversifying across the globe. If the co-movement between international and domestic equity returns is lower, more advantages are expected to be gained from international diversification. The scenario triggers more foreign portfolio flows into the host country.

Kaminsky and Schmukler (2008), Rogoff et al (2004) and Brafu-Insaidoo and Biekpe (2014) noted that countries can increase incentives if they want to attract more international capital flows through (1) deregulating domestic financial markets activities and (2) by liberalizing their equity markets and capital account transactions. They further observed that if these policies are effectively implemented, they could bring more inflow of international capital through lowering down quantitative limits of ownership and investments and lowering costs and overally increasing assets' returns. Excessive regulations hinder commercial and entrepreneurial activities because the scenario forces employees and managers to allocate more time towards complying with regulations and rules (Brun, Chambas and Mansour. 2015:206). If an investor intends to set up a production plant for example in an emerging economy, cumbersome compliance procedures, legal processes and high startup expenses may force the potential foreign investor to set up the production facility in another country, where business environment is more conducive (Brun et al. 2015:206).

Exchange rate significantly affect FPI in a negative manner, consistent with Biglaiser and DeRouen (2006:59) whose study noted that depreciation of the exchange rate results in the outflow of capital and vice versa. Exchange rate appreciation increases investors' confidence in investing in the host country as foreign investors feel safer in investing in the country. This leads to enhanced investors' rights, improved efficiency in the economy, more developed infrastructure and overall higher economic growth rate. Moreover, the political and social stability coupled by higher economic growth rate in the host country attracts foreign portfolio investors. Host country's currency appreciation is another additional avenue for gaining returns for foreign portfolio investors (Hermes and Lensink. 2003; Rajan and Zingales. 1998; Omran and Bolbol. 2003: 232). Volatility of the exchange

rates has a deleterious effect on foreign portfolio flows as it shows a high level of uncertainty in the returns likely to be obtained by the foreign investors. This also resonates with Persson and Svensson (2010) whose study noted that higher exchange rate volatility negatively influences international investments.

Hallett, Peersman and Piscitelli (2004) observed that fluctuations in exchange rates significantly affect FPI. Carrieri, Errunza and Majerbi (2006) argue that when determining the impact of currency fluctuations on FPI, one should consider the real rather the nominal exchange rate. The study noted that the advantage of real exchange rate is that it is a better indicator of the volatility of FPI because it does away with the effect of inflation. Real exchange rates and FPI have been found to change over time by a study done by Kodongo and Ojah (2012). Moreover, research by Froot and Stein (1991), Eun and Resnick (1988), Bleaney and Greenaway (2001) and Ersoy (2013) showed that there is a negative association between FPI and exchange rate. These prior studies also noted that foreign investors are able to purchase local assets at cheap prices if the host country's currency depreciates.

Nashashibi and Bazoni (1994) found that rate of inflation affects investments, for example, high inflation causes more uncertainty and confusion with regard to the future value of the investment. They further argued that in the presence of high and volatile inflation, firms become uncertain about the final investment costs and they might fear that high inflation could plunge the host country into future macroeconomic uncertainty. Countries which are characterized with stable and prolonged period of low inflation experienced investment rate of return, according to the same study by Nashashibi and Bazoni (1994). Nashashibi and Bazoni (1994) concluded that higher inflation rates negatively affected foreign investors to an extent that they end up looking for alternative investment destinations which gives them high real returns. However, if the fall in the demand and economic growth is caused by low inflation, then the inflation rates will not be able to sufficiently boost investment.

In line with Agarwal (1997), higher return on investment is one of the variables that attracts foreign investors into the economy whilst higher inflation rate is associated with volatility in the quantity of FPI flowing into the host country. The same study noted that there exists a negative relationship between exchange rates, inflation rates and FPI. On the contrary, Broner and Rigobon (2005) argued that inflation rate partially explains the volatility in FPI whilst also pointing out that the volatility of FPI is better estimated by the economic development levels. However, a study by Rai and Bhanumurthy (2004) observed that there is a negative influence of domestic inflation on FPI. Higher levels of stock market return and inflation in the host country were found by Waqas et al (2015) to have had a significant positive influence on FPI inflows.

Bekaert and Harvey (1998) found out that better stock market performance is an important variable that attracts FPI into the host country. This is because better stock markets return encourages foreign investors to invest into the stock market and boost their overall confidence in the host country. This in turn according to Levine (1997) pushes the level of liquidity in the domestic stock market. Bekaert and Harvey (1998), Gordon and Gupta (2004) and Froot et al (2001) also noted that stock market returns is the most vital factor that positively influence foreign portfolio investment into the host country. Culha (2006) also noted that previous stock market returns were paramount in attracting future foreign portfolio investments into the host country. This is because higher stock market index is a sign that there exists stable macroeconomic fundamentals in the economy which increases the chances of high corporate sector profitability and stock market returns. For example, higher levels of banking sector development attract more FPI and general foreign investment into the banking industry (Choong, Baharumshah, Yusop and Habibullah. 2010; Agbloyor, Abor, Adjasi and Yawson. 2013).

Industrial production is one of the features that contributes to the decline in the volatility in FPI (Chuhan et al. 1998). Several studies have noted that the growth in production is a push factor of FPI whilst other studies viewed production growth as a significant pull factor of FPI. For example, De Vita and Kyaw (2009) argued that industrial production and output are pull factors that significantly explains the volatility in foreign capital flows.

As supported by Mody et al (2001), the level of industrial production in the host country plays a major role in luring not only FPI but general foreign investment into the host country.

Economic conditions in a country can be a factor affecting FPI positively. Literature also shows that financial sector development, better macroeconomic policies, transfer of technology from developed to developing nations and more savings and investment attracts more FPI into the host country (Ghura and Goodwin. 2010; Ferreira and Laux. 2009; Abdelhafidh. 2013). Alexakis, Patra and Poshakwale (2010) also observed that economic development as represented by higher GDP per capita was found to have attracted more FPI than economic growth indicators. The finding that foreign portfolio investors are more attracted into the host country by higher economic development than higher economic growth rates was also shared by a study done by Abdelhafidh (2013).

An increase in FDI lowers down the volatility of FPI because it enhances foreign investors' confidence hence bringing more investment into the host country (Gozgor and Erzurumlu. 2010). Tang (2015) observed that FDI positively influenced FPI while FPI did not have any effect on FDI. However, FPI was found to be a more non- persistent and non-consistent type of capital flow in comparison to FDI (Taylor and Sarno. 1997). Thus, there is a potential significant association between FDI and FPI volatility.

2.3 METHODS OF FPI

A number of ways in which investors can invest in international markets, such as American depository receipts, exchange-traded funds, international funds, foreign securities and Eurobonds (Haider, Khan and Abdulahi. 2016; Byrne and Fiess. 2016; Kleimeier and Sander. 2003. These are discussed below:

Haider, Khan and Abdulahi (2016) explain an American depository receipt as a negotiable security that represents securities of a non-US company that trades in US financial markets. American depository receipts imitate their domestic stocks very closely, and offer investors a way of investing internationally without actually buying stock with foreign

exchange. Investors can opt to invest in an exchange-trade fund as a method of investing internationally. An exchange-traded fund is an investment fund traded on the stock exchange that holds assets such as stocks, commodities and bonds.

Byrne and Fiess (2016) discuss another method in which investors can opt to invest in is the international stock fund: international stock funds are an investment opportunity comparable to exchange traded funds as they provide for diversification but these have disadvantages and advantages that are associated with regular funds and exchange-traded funds. In the case of international stock funds, a hired professional portfolio manager is in charge and decides what to place in the portfolio. This gives the advantage to the investor as the portfolio manager takes all the responsibility and administrative stress.

Eurobonds (Kleimeier and Sander. 2003) are also seen as a good option for investors. A Eurobond is an international bond that is denominated in currency not native to the country where it is issued.

Finally, investors can choose foreign securities as an investment option that yields good returns. These trades are typically more expensive and less liquid than regular domestic trades. Investors are recommended to carefully investigate all alternatives before they decide to use foreign securities (Delechat, Wakeman-Inn, Wagh and Ramirez. 2009).

2.4 THEORIES OF FPI

There are two theories that describe the determinants of FPI, namely push and pull factors (Calvo et al. 1993) (see Figure 1).

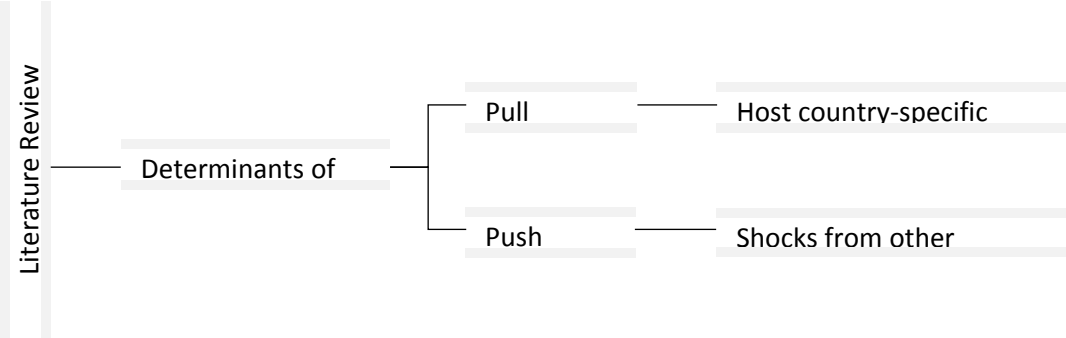


Figure 1: Adopted from Singhania and Saini (2017:190)

Pull factors attract the investor into the host countries, such as market pull factors, resources, policy frameworks, political and economic stability, growth, domestic stock market performance, domestic growth, exchange rate, stock return risk, interest rate differentials and returns in other emerging markets. Push factors are unfavorable factors in the home country that repel investment out of the home country. Investors are forced out of the home country by the push factors and opt for host countries whose conditions are favourable. Push factors are the direct opposite of pull factors and include market push factors, increases in production costs, home country business conditions, currency risk, country risk, risk identification, global liquidity and capital controls (Agarwal. 1997; Chakrabarti. 2001).

Nowadays, the world is split into several economic blocs, for example, there is European Union (EU) and the common Market of Eastern and Southern Africa (COMESA), among others. If the product originates from a member nation of a particular block, it might enjoy preferential tax treatment that is denied the same product originating from other economic regions. For instance, a product that originates from Ethiopia gets more favourable tax treatment in COMESA in comparison to similar products whose origins is from China because Ethiopia is COMESA member. Market pull factors are the most critical factors that determines FPI in the host countries and large market size is one of the factors that

attracts foreign portfolio investments. However, market size as a pull factor relies on the product type. It is against this background that the ability of consumers to purchase a product is important (Agarwal. 1997; Chakrabarti. 2001).

Investors require reliable human and natural resources to manufacture a product hence foreign investors are lured into the host countries by the availability of not only natural resources but human resources as well. Foreign investors would choose to invest in a nation characterized by the abundance of natural resources required to produce products in large quantities and at reasonable prices. Moreover, foreign investors are attracted to invest in countries in which there are cheap, disciplined and skilled manpower. The policy framework of a host country also influences the direction of FPI, for example, privatization and liberalization of the economy attracts FPI. Inducements and regulations encouraging FPI and other multilateral and bilateral investment treaties aimed at enhancing the inflow of FPI are pull factors (Agarwal. 1997; Chakrabarti. 2001).

Investments are made with the main aim of making profit that should be realized over time. To earn profits, political and economic stability in the host country must be ensured since these provide an enabling environment for foreign investors. The nature of investment requires the existence of some inputs from other enterprises. A group of enterprises feeding each other are known as a cluster. For example, a textile factory needs an enterprise that spins cotton and produces raw material to produce clothes. Foreign investors are attracted into a host country where inputs are abundantly available for them to be able to manufacture and produce (Agarwal.1997; Chakrabarti. 2001).

A foreign investor is attracted into a country characterized by high demand for the products because this may lower the costs of transport by producing the product in that country. This leads to the increase in profit generated from the investment. Moreover, investing in a country where there is increased demand for a particular product allows the investor to adapt the product to suit the needs and tastes of the local people. Beck (2013) and Louis et al. (2015) found that developed countries needs investors in order to ensure that their investment does not negatively influence the environment, for example they

might want foreign investors to decrease the levels of carbon emissions. On the contrary, developing nations in most cases have lax environment laws and it is against this backdrop that foreign investors are normally attracted to invest in developing countries in order to reduce additional costs brought about by strict environmental legislation (Beck. 2013; Louis et al. 2015).

Performance of the local stock market has an effect on foreign portfolio flows either way, according to Chakrabarti (2001). A surge in foreign portfolio flows in response to bullish stock markets show that foreign portfolio investors are aggressively looking for better stock market returns (Chakrabarti. 2001; Agarwal. 1997; Rai and Banumurthy. 2004). On the contrary, Gordon and Gupta (2004) noted that the association between FPI and stock market performance may be negative if foreign investors buy when the equity index is falling, with the expectation that returns will rise in future.

Dobbs et al (2013) maintain that returns in other emerging markets are a critical factor when investing internationally. While diversifying globally, foreign investors can invest either in financial or emerging markets in industrialized economies. It is vital to see different emerging markets as rivals, where each separate economy is fighting to achieve a greater share of foreign investments. In such a case, higher stock market returns in emerging economies imply higher likelihood of foreign investment going to the competing economies.

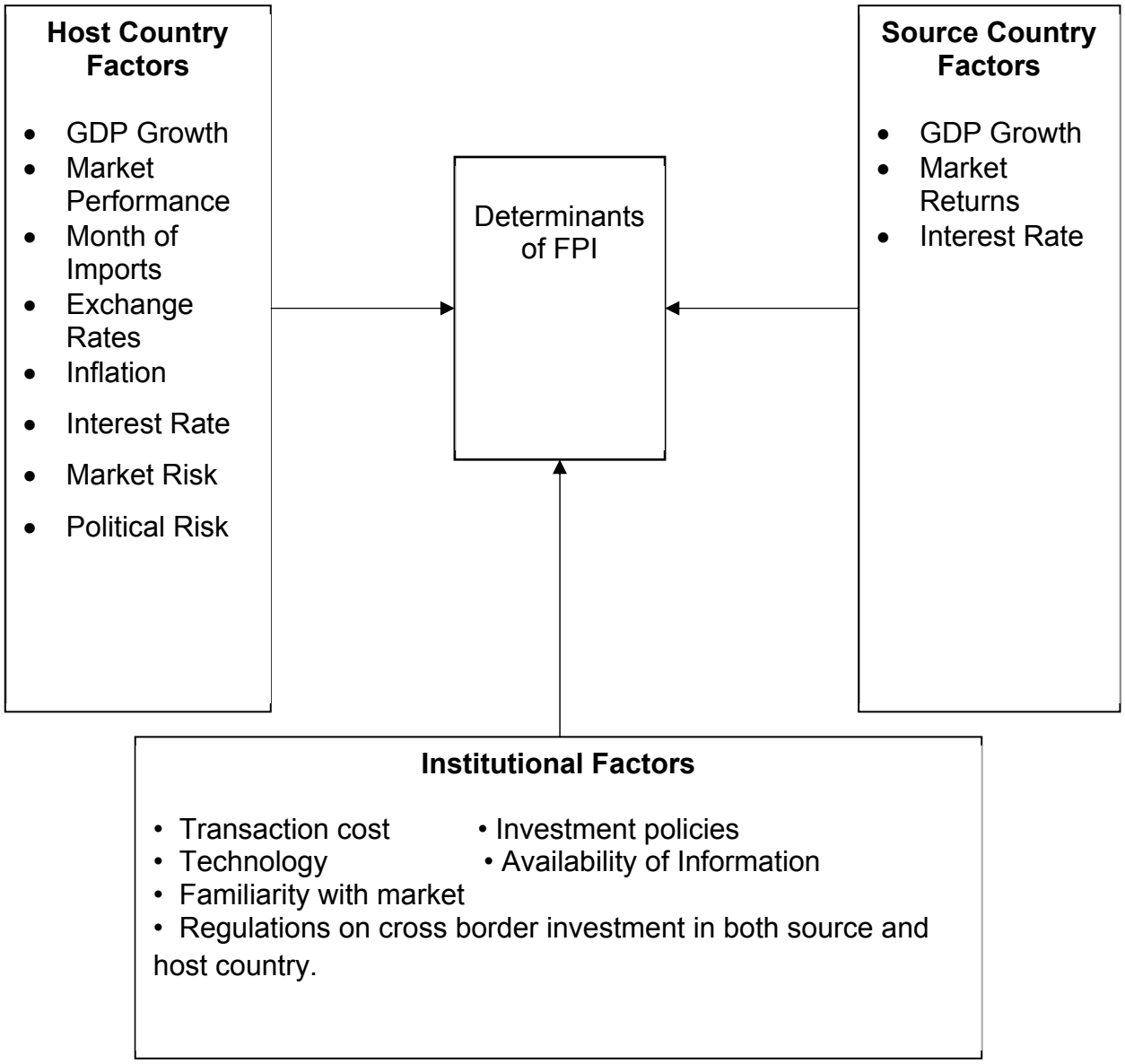
Dobbs et al (2013) stipulate that macroeconomic volatility is a push factor since the investors may wish to find a more favorable market for its investment. An increase in the cost of labour is a vital variable that pushes investors away from a particular home country. The same study also found out that inflationary pressures are push factors. Business environment in the home country may cause the investor to opt for international investment (Rajan and Subramanian. 2006).

Persson and Svensson (2010) argue that currency risk is crucial to determining the country of investment. Exchange rates volatility is expected to influence foreign portfolio

inflows in a negative manner due to the fact that it represents a higher level of uncertainty in the quantity of stock market returns going to the foreign investor. Persson and Svensson (2010) noted that fluctuations in exchange rates negatively influence foreign capital flows and international trade thereby pushing investors to other countries. Country risk is also a major factor affecting portfolio investors in different countries (Persson and Svensson. 2010). Availability of enough host country liquidity shows that the country will not default on paying its external obligations if foreign investors withdraws their funds. Countries characterized by availability of enough stock of reserves to meet short term obligations and to pay for its imports are regarded as creditworthy and has a lower probability of defaulting. In summary, lower financial risk in the host country lures more FPI.

Global liquidity is regarded as a critical variable that investors take into account when investing (Calvo et al. 1993). Increased output growth in developed countries represents the investment profitability in the corporate sector in the same countries. Moreover, higher levels of economic growth in developed countries is associated with higher profits in the corporate sector thus ensuring the availability of more funds channeled towards investment into the developing countries. On the contrary, economic growth decline might mean that companies do not make profit by investing in their home country and could be a reason to invest in developing countries. In both cases, economic growth in developed countries lead to higher global liquidity, although the evidence in the literature is mixed.

Figure 2 summarizes the factors that influence FPI from a theoretical point of view.



Source: Adapted from Kumara and Dayaratne (2015:5)

2.5 DETERMINANTS OF FPI – EMPIRICAL VIEW

According to World Bank (1993), portfolio investment involves capital movement across national boundaries and positions involving equity securities other than those included in direct investment or reserve assets. The latter defines foreign portfolio flows as consisting of money market instruments (commercial paper and certificates of deposits), bonds,

equity (country funds and direct stock market purchases). UNCTAD (2016) defined foreign portfolio flow as a cross border transaction of financial assets in securities, a company's assets or through the financial market. Foreign portfolio investment therefore involves assets transfer from one country to another through investing in securities like derivatives, bank loans, bonds, stocks and other forms of credit.

Determinants of FPI fall into two categories, namely the policy/regulatory determinants and economic determinants. Economic determinants are not linked directly to policies targeted at attracting FPI. Instead, they reflect the general state of the economy of the host country, the potential for firms that are operating in that environment to make profit and to earn a satisfactory return on investment. Investors typically therefore focus on factors such as (i) exchange rate stability, (ii) health of domestic banking system, (iii) high economic growth rate, (iv) level of foreign exchange reserves, (v) macroeconomic stability, and (vi) real interest rates, Inflation rate and GDP and (vii) stock and bond market liquidity.

Haider, Khan and Abdulahi (2016) investigated the economic factors that attracted investors to a country such as England as a developed country, using the ARCH test with data from 1997 to 2014.They found that the exchange rate had a significant negative impact on FPI and at the same time, when the exchange rate appreciated, it instilled confidence in investors in a country. They further found that external debt and economic growth were significant determinants of FPI and that population and exchange rate had a significant impact on investors' decisions.

Igwemeka, Chijindu and Chinyere (2015) studied the effect of portfolio investment inflows on Nigerian economy using the Ganger Causality Test and data from 1987 to 2012. The study noted that interest rates and economic growth were both strong determinants and pull factors in investors' decisions. Consistent with the previous findings, they showed that FPI had a significant positive impact on the economy and contributed to investors' decisions.

In their study, Chukwuemeka, Stella, Victor and Onyema (2012) investigated the factors that determine FPI in Nigeria using time series data (1986 -2006). They found that foreign investments and real rate of return on investments were co-integrated in the capital market, meaning that these variables were related with each other in the long run. They further found that FPI was positively related to real rate of return on investments. On the other hand, the same study noted that FPI was negatively related to market capitalization, institutional quality, real exchange rate and the degree of trade openness in Nigeria.

Examining the macro-economic variables' impact on FPI and using data from 1980 to 2010, Onuorah and Akujuobi (2013) found that no relationship existed between inflation rate, interest rate, GDP, foreign portfolio investments and exchange rate. They further observed that excellent macro-economic policy performance and a national investment strategic plan enhanced efficient and optimal investments holding and management while paying attention to employment generation and infrastructure development in the country.

Bayai and Nyangara (2013) investigated Zimbabwean determinants for private portfolio investors using multiple regression analysis models and data from 2009 to 2011. They found that GDP made a positive contribution to investors' desire to invest in the Zimbabwean economy. They also found that debt servicing had a significant positive association with private investment and that trade terms also contributed positively to private investment. They showed that political risks related negatively to private portfolio investments (Bayai and Nyangara. 2013).

In a study by Chukwuemeka (2009) that examined the comparatively low yield in developing countries together with higher economic growth rate and higher rate of return, it was found that these factors encouraged foreign investors to shift their resources and funds to developing countries. They found that increase in FPI caused a surge in the development of international economic linkages and an increase in production resources in host countries.

Aziz, Anwar and Shawnawaz (2015) investigated the variables influencing inflows of FPI to Pakistan as a developing country, using time series data (2005 – 2014) and the Ordinary Least Squares (OLS) method. They found that the extent of trade openness, real GDP growth rate and market capitalization all had a significant positive association with FPI in Pakistan, whereas inflation rate showed an insignificant negative association with foreign portfolio investment flows.

In contrast to Aziz et al (2015), in investigating the factors that influenced equity portfolio investments in Pakistan and using data from 1998 to 2012 and the Autoregressive model, Soharwardi, Khan and Mushtaq (2018) found that market capitalization, trade openness and growth rate had a positive effect on foreign investments. At the same time, they found that these variables were insignificant because Pakistan was characterized by a lack of transparency and did not have a peaceful economic or financial atmosphere.

The relationship of foreign portfolio inflows and domestic savings in Pakistan was investigated by Masood and Mohsin (2002), who used time series data from 1985–2000 and co-integration techniques. They found that the domestic savings rate had an insignificant relationship with capital inflows since investors rarely considered this variable when making an investment decision.

Duca (2012) argues that foreign capital inflow and outflow are critical today whilst the geographical component is also important for the international flow of the capital. The same study also noted that foreign capital inflow relies on market size and transaction costs of the host country. In an IMF survey, it was found that the transaction costs, size of the market and asymmetric information were critical factors that influenced foreign capital flow into the host country. Shocks and important market events were also found by Duca (2012) to have had an important effect on foreign portfolio investments.

Other factors which were found by Duca 92012) to be significant determinants of foreign capital flows include are efficiency of the market, economic growth and higher probability of getting higher returns on the stock market of the host country. The study noted that the

variables increase the level of macroeconomic stability hence attracting FPI which is critical in terms of assisting the host country to reduce its current account deficit. The same study noted that FPI volatility however can have a deleterious effect on economic growth and trigger economic crisis in the host country.

Waqas et al (2015) explored the relationship between foreign investment volatility and macroeconomic factors in Pakistan, China, Sri Lanka and India. FPI inflow was found to have strongly relied on the macroeconomic stability of the host nation. The study also noted that FPI volatility is significantly reduced in the host countries if the latter is characterized by higher economic growth, low levels of inflation, currency depreciation, foreign direct investment and high level of interest rates. This suggests that stable macroeconomic conditions in a country attract more foreign portfolio investors to the country, with the result that volatility of FPI is reduced.

Khan (2006) argues that FPI is the most conspicuous type of private capital flows into Pakistan, on-resident foreign currency deposits and other short-term capital. This reversal flow leads to a banking crisis and in the end, precariousness is observed in both interest rates and exchange rates. The same study revealed that foreign portfolio investment flows into emerging markets like Pakistan are understood best in the context of the formation of international capital flows changes. Khan (1996) observed that foreign portfolio inflows is more reversible in comparison to other forms of foreign investments in developing countries and this is largely due to their innately capricious nature. The study further noted that foreign portfolio investment flows in Pakistan has been more volatile since portfolio investment in this country is mainly directed towards stock exchanges, medium-term and short-term public debt instruments.

Carrieri et al (2006) argue that one should consider the real exchange rate rather than the nominal one as the real rate eliminates the effect of inflation and is a better indicator of FPI into a country. Inflation also affects FPI (Agarwal. 1997). An increase in inflation rate in one country and greater returns on portfolio investment for foreign investors stimulates them to invest in the host country. Agarwal (1997) found a negative relationship

between inflation rate and exchange rate and foreign portfolio investment. Rai and Bhanumurthy (2004) noted a negative effect of domestic inflation on FPI and also found out that home country inflation and higher returns in the host country attract foreign investors to put their money in the host country, suggesting that a significant relationship between inflation and FPI exists.

Rai and Bhanumurthy (2004) studied the factors affecting FPI in India and found that FPI inflows were influenced by the returns on the stock market, inflation rate ex-ante risk (both domestic and foreign). Furthermore, they noted that stock market investments had a positive effect on the national economy in terms of cash injections.

In their study, Seabra, Flach and Santos (2014) analyzed the determinants of European portfolio investment outflows, emphasizing the impact of the European Monetary Union and exchange rate uncertainty. They used an ARCH model and data from 2001 to 2005. They found that most European portfolio investments were dominated by the transaction cost hypothesis and that exchange rate uncertainty and geographical and institutional distance were statistically significant where investor decisions were concerned.

Agarwal (1997) investigated what determined FPI in Asian developed countries using regression analysis and data ranging from 1998 to 2002. Real exchange rate, inflation, share of domestic capital market and economic activities index were found to be significant determinants of FPI. Total foreign trade, foreign direct investment and current account deficit of the host country were found to be statistically insignificant determinants of FPI. With regard to the influence of FPI on economic growth, Agarwal (1997) observed that inflation rate and economic activities index showed an upward trend, thereby significantly affecting investors' decisions.

The economic factors that attract the investors to a developed country such as England were investigated by Haider, Khan and Abdulahi (2016). They used the ARCH test on data from 1997 to 2014. They found that the exchange rate had a significant negative impact on FPI and when a country's exchange rate appreciates, this increases investors'

confidence in investing. They further found that external debt and economic growth strongly affected FPI and that exchange rate and population had significant impact on investors' decisions.

Below is a summary of the determinants of FPIs that have been discussed above:

Table 2: Summary of empirical literature		
FPI Determinants	Direction of the impact on FPI	Source
Financial development of the home country	Financial Development of home country→±FPI	Boskovska (2006)
Stock return of markets	Stock return of markets →FPIs	Rai and Bhanumurthy (2004)
Stock market capitalisation	Stock market capitalization→FPIs	Taylor and Sarno (1997)
Real Rate of Return	Real Rate of Return→FPIs	Chukwuemeka (2009)
Exchange rate	Exchange rate→FPI	Onuorah and Akujuobi (2013)
Domestic inflation	Domestic Inflation→FPIs	Soharwardi et al (2018)
Higher earnings expectations	Higher earnings expectations±FPI	Soharwardi et al (2018)
Interests rates	Interest rates→FPIs	Onuorah and Akujuobi (2013)
Domestic stock market performance, exchange rate and domestic output growth	Domestic stock market performance, exchange rate and domestic output growth±FPI	Rai and Bhanumurthy (2004)
Domestic savings rate	Domestic savings rate←FPIs	Masood and Mohsin (2002)
GDP Growth Rate	GDP Growth Rate→FPI	Bayai and Nyangara (2013)
Macro-economic policy performance	Macro-economic policy performance ←FPI	Rai and Bhanumurthy (2004)
Degree of trade openness	Insignificant	Masood and Mohsin (2002)
Economic growth of host country	Economic growth of host country →FPI	Igwemeka et al. (2015)
Index of Economic Activities	Index of Economic Activities →FPI	Bayai and Nyangara (2013)

Bond market	Bond Market ← FPI	Chen and Quang, 2014
Exchange rate volatility	Exchange rate volatility → FPI	Taylor and Sarno (1997)
Current account balance, gross national income and deposit interest rate	Gross national income, current account balance and deposit interest rate had a positive impact on FPI	Pala and Orgun (2015)
Capital accounts liberalization	Capital accounts liberalization had a positive influence on FPI	Makoni (2014)

Source: Author compilation

2.6 COMBINED IMPACT OF FINANCIAL DEVELOPMENT AND TRADE OPENNESS ON FPI – LITERATURE REVIEW

Few empirical research work investigating a direct relationship between financial sector development trade openness have been conducted, according to the literature. Niroomand et al (2014) explored the association between openness to trade and financial sector development in emerging markets using the F-bounds approach with annual data (1980 – 2011). Financial development was observed to have had a positive and significant effect on trade openness in emerging markets both the long and short term.

Chen, Mancini-Griffoli and Sahay (2014) noted that trade openness between China and Latin America had a positive significant impact on Latin America's financial sector during the period under study (1982 – 2009). Trade openness was also found to have generally positively contributed towards the growth of the financial sector in Latin America. Baltagi et al (2009) explored the association between openness and financial development in industrialized and developing nations using dynamic panel methods with annual data ranging between 1980 to 1996. Financial openness and financial trade openness were both found to have enhanced the development of the banking sector in both developing and industrialized nations. Alajekwu et al (2013) also noted that trade openness' impact on Nigerian Stock Exchange was negligible. Asghar and Hussain (2014) also revealed that openness to trade had a significant positive effect on financial sector development in developing nations.

Zhang et al (2015) explored the relationship between financial sector development, financial openness and trade openness in China using the dynamic panel estimation

method. A negative relationship running towards financial sector development from trade openness was observed. The same study also found out that both financial and trade openness positively and significantly affected China's financial efficiency.

Gries and Redlin (2012) noted that the association between trade openness and financial sector development followed a feedback effect view in Sub-Saharan Africa. Similar findings were obtained by Polat et al (2014) whose study noted that there existed a feedback relationship between financial sector development and trade openness in South Africa in the long and short run.

Employing the dynamic panel data estimation method with annual data (1980-2001), Law and Demetriades (2006) studied the association between institutions, trade openness and financial sector development in developing nations. The study showed that both strong institutions and openness to trade were instrumental in enhancing the development of the financial sector in developing countries. The same study observed that trade openness and strong institutions had a positive significant effect on financial development in middle income countries.

Chimobi (2010) studied the causal relationships among economic growth, trade openness and financial development from 1970 until 2005 in Nigeria. The findings showed that that openness to trade and financial development had a causal positive impact on economic growth. On the other hand, economic growth was found to have had a positive causal influence on trade openness and financial development, a finding that supports the growth-led trade.

2.7 CHAPTER SUMMARY

The chapter provided a comprehensive discussion of the theoretical and empirical literature on the determinants of FPI. It is clear from the literature that consensus does not exist yet when it comes to the determinants of FPI. In other words, there is no single list of factors that determine FPI that has as yet been generally agreed upon. The scant empirical research that have explored the determinants of FPI in emerging markets

ignored the dynamic nature of FPI data and endogeneity problem normally associated with FPI and its determinants. It is against this backdrop that this study investigates empirically the determinants of FPI in emerging markets. Chapter 3 provides a discussion of the research methodology used in this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 CHAPTER INTRODUCTION

This chapter describes and explains the methodological processes followed in the data analysis. It is a very important chapter because it links the theoretical foundation of the study to the data analysis. In general, the chapter clarifies the variables and their proxies and explains the reasons for their selection. The empirical models used in the study are presented and explained in detail. Last but not least, the chapter explains the selection and justification of the econometric estimation techniques used in the study.

The rest of the chapter is structured as follows: the research design is explained in Section 3.2. Section 3.3 explains the variables used, theory intuition and a priori expectation, Section 3.4 describes the measurement of all the variables while Section 3.5 deals with data description and sources. Section 3.6 discusses research methodologies used by previous researchers whose studies investigated the determinants of FPI inflows. Section 3.7 provides the general model specification and Section 3.8 focuses on the empirical model specifications used in the study. Estimation techniques used in the current study are described and evaluated in Section 3.9. This section also justifies the data analysis methods used in the study. The final section of the chapter (Section 3.10) provides the conclusion.

3.2 RESEARCH DESIGN

This study employed a quantitative research design, which involved measuring variables and the use of quantitative data to investigate relationships between or among variables (Ivankova. 2015). This quantitative research design was premised on the use of secondary data extracted from reputable international databases. Apart from using quantitative variables to generate statistical values, a quantitative research design also uses numeric data to develop statistical empirical models that can be applied to investigate relationships between or among variables (Tembo. 2018). As secondary panel data were used, quantitative research methods were deemed best suited to exploring the determinants of FPI in emerging markets.

3.3 VARIABLES USED, THEORY INTUITION AND A PRIORI EXPECTATION

This section discusses the independent or explanatory variables and their theoretical influence on FPI. The choice of these variables was based on relevant literature on host countries' determinants of FPI inflows. Variables that have been found to be significant in the literature and whose data were available include initial FPI, foreign direct investment, trade openness, financial development, exchange rates, economic growth, savings, inflation, population growth and external debt (see Table 1). For example, empirical studies by Al-Smadi (2018), Haider et al (2016), Singhania and Saini (2017), Singhania and Gupta (2011), Ahmad et al (2015) and Garg and Dua (2014) constitute some recent research that concluded that these variables had a significant positive effect on FPI.

Table 3: Variables, theory intuition and the expected sign

Variable	Theory intuition	Expected sign
Initial FPI	In keeping with Barrell and Pain's (1999) findings, existing foreign investors provide a signal that the host country's business and investment climate is favourable, thereby attracting more foreign investment. New foreign investors can benefit from positive spillover effects already generated by existing foreign investors (Wheeler and Mody. 1992).	+
Financial development (FIN)	Foreign portfolio investors who are looking for higher returns on their investments are attracted by a rise in the stock market index as this is a reflection of the increase in the value of the shares of listed firms in that particular country (Al-Smadi. 2018:332). The same study argues that foreign portfolio investors are attracted to a country whose stock markets are liquid, in that they will be able to withdraw their funds when the need arises. Bartels et al (2009) noted that financial markets provided cheaper, more efficient and more timely information for potential foreign investors, thus enhancing international mobility of capital. Apart from reducing exit and entry barriers for foreign investors, developed stock markets facilitate linkages between foreign and local markets (Kaur et al. 2013:740). Some authors have argued that foreign	+/-

	portfolio inflows increase in direct response to bullish stock markets as foreign investors chase higher returns (Chakrabarti. 2001). The author is of the view that very high levels of financial sector development attract speculative investment, which destabilizes the economy or which is a sign of macroeconomic instability. Foreign portfolio investors are not attracted to such an unstable economy. The impact of stock market performance on FPI is negative if foreign investors purchase stocks when the stock market index is going down, expecting that the returns will go up in the future (Gordon and Gupta. 2004).	
Trade openness (OPEN)	Alesina and Dollar (2000) noted that trade openness enhances a country's competitiveness and provides an indication to the international community of its commitment to the implementation of macroeconomic policies that are sound, thus attracting foreign investors. Dobbs et al. (2013) found that one of the factors that attracted foreign portfolio investors was a high level of trade openness, which removes any impediments to international capital mobility. However, Masood and Mohsin (2002) observed that trade openness had an insignificant or negligible influence on FPI.	+
Foreign direct investment (FDI)	Higher levels of FDI inflows into the host country stabilize the volatility levels of FPI thus promoting a stable macroeconomic investment climate that attracts potential foreign portfolio investors. Foreign direct investment crowds out FPI if financial markets in the host country are still shallow (Hailu. 2010).	+/-
Exchange rates (EXCH)	Local currency depreciation in a country is associated with less FPI volatility and a more stable macroeconomic investment climate, which normally attracts FPI (Haider et al. 2016). On the contrary, a higher level of local currency depreciation is inflationary and wipes out the value of the return on capital invested thus chasing away potential foreign portfolio investors (Al-Smadi. 2018). In contrast, Garg and Dua (2014) argue that appreciation of the host country's domestic currency is an additional avenue through which foreign investors gain returns on their	+/-

	investment. The exchange rate negatively affects FPI in that if the currency depreciates, this leads to the outflow of capital out of the country and vice versa (Biglaiser and DeRouen. 2006:59). Exchange rate appreciation brings increases investor confidence in investing in the country.	
Economic growth (GROWTH)	Economic growth increases a corporation's chances of generating more profit, attracting foreign portfolio investors into the capital market who wish to earn higher returns on investments (Al-Smadi. 2018:331). Al-Smadi (2018) noted that negative economic growth has the opposite effect (a deleterious effect) on FPI inflows. Higher economic growth is a sign of a stable macroeconomic investment climate in a particular country, a country characteristic that attracts foreign portfolio investors (Haider et al. 2016). The same argument was expressed by Garg and Dua (2014:20). Leong and Wickramanayake (2004) believe that higher levels of GDP in a particular country might trigger a decline in the inflow of FPI as locals would prefer to repurchase domestic securities from foreign investors.	+/-
Savings (SAV)	Along with financial sector development and technology transfer, an increase in savings and investment was found to have attracted FPI into countries (Ferreira and Laux. 2009; Abdelhafidh. 2013). Masood and Mohsin (2002) found that domestic savings had an insignificant positive effect on FPI in Pakistan because foreign investors rarely considered such a variable in their international investment decision-making processes.	+
Inflation (INFL)	Al-Smadi (2018) argues that high inflation rates wipe out not only the value of corporations but also their profitability levels. Such a scenario then dissuades potential foreign portfolio investors from investing in the particular country because they would achieve very low or negative rates of return. Low inflation rates are associated with a stable macroeconomic	-

	environment, attracting foreign portfolio investors (Al-Smadi. 2018:331; Haider et al. 2016:144).	
Population (POP)	A higher population growth rate enhances the market size thereby increasing the general level of demand and value of investment securities in the economy (Haider et al. 2016). Growth of the population positively and significantly affected FPI in China (Haider et al. 2016:148). The positive influence of the size of the market on FPI was also explained by Ahmad et al. (2015).	+
External debt (EXDEBT)	Ahmad et al (2015) found that external debt had a significant negative influence on FPI in China.	-
Interest rates (INTR)	Portfolio investment moves from a country where interest rates are lower to a country that is characterized by higher interest rates in order to achieve a higher return on investment (Garg and Dua. 2014). These researchers also found that higher absolute interest rates could be a sign of unstable macroeconomic stability, a scenario that scares away potential foreign portfolio investors. In contrast, Haider et al (2016) noted that higher interest rates in a particular country were normally associated with lower FPI volatility in that country. Such a scenario depicts a macroeconomic environment that is stable and attracts more FPI (Haider et al. 2016:144).	+/-

Source: Author's compilation

Other variables that have not been discussed in this section but that have an influence on FPI were discussed in Chapter 2. This section is limited to only those variables that were used in the data analysis.

3.4 MEASUREMENT OF VARIABLES

The variables listed in Table 4 were measured using the following proxies, as guided by empirical research done nationally and internationally.

Table 4: Measurement of variables		
Variable	Proxy used	Empirical studies using the same proxy
FPI (FPI)	FPI inflow as a ratio of GDP and FPI inflow (% of GDP)	Al-Smadi (2018); Wortmann (2010)
Financial development (FIN)	Stock market capitalisation (% of GDP)	Levine and Zervos (1998); Korgaonkar (2012)
	Stock market turnover ratio	Beck and Levine (2004); Korgaonkar (2012)
	Stock market value traded ratio	Beck et al (2000); Korgaonkar (2012)
Trade openness (OPEN)	Exports + imports (% of GDP)	Tsaurai and Odhiambo (2012); Tsaurai (2017b); Singhania and Gupta (2011); Alam et al (2013)
Foreign direct investment (FDI)	Net FDI inflow (% of GDP)	Biglaiser and DeRouen (2006); Nnadi and Soobaroyen (2015)
Exchange rates (EXCH)	Local currency against the United States Dollar (US$)	Raza et al (2012); Tsaurai (2017b); Rai and Bhanumurthy (2004); French and Vishwakarma (2013); Bhasin and Khandelwal (2013); Singhania and Saini (2017)
Economic growth (GR)	GDP per capita	Sghaier and Abida (2013); Tsaurai (2017b)
Savings (SAV)	Gross domestic savings (% of GDP)	Tsaurai (2017b)
Inflation (INFL)	Inflation consumer prices (annual %)	Tsaurai (2017b)
Population (POP)	Population growth % annual	Becker et al (1999); Tsaurai (2018a)

External debt (EXDEBT)	External debt stock (% of GNI)	Haider et al (2016)

Source: Author's compilation

The proxy or proxies used were selected for two main reasons: (1) other empirical studies have used them (see Table 2); and (2) the data for these proxies were easily available from reputable world databases such as World Development Indicators and International Monetary Fund Statistics, to mention only two.

3.5 DATA, DATA DESCRIPTION AND SOURCES

The current study used annual panel data for all the variables, in line with majority of similar studies on determinants of FPI. The annual panel data series used in this study ranges from 1995 to 2016, a period chosen primarily because of data availability and because it is a timeframe within which emerging markets received significant foreign investment. As in Mpofu's (2014) study, the panel data series used allowed for the investigation of the trends in FPI inflows into emerging markets. The data for all the variables were collected from World Development Indicators, African Development Indicators, Global Financial Indicators and International Monetary Statistics. The advantage of such sources of data is that they are reputable international sources, thus reducing the likelihood of data inconsistency and spurious results (Tsaurai. 2017a). The countries which fall into the emerging markets group according to the International Monetary Fund (2015) and whose data were available include Turkey, South Africa, Thailand, Russia, Singapore, Portugal, Argentina, Republic of Korea, Philippines, Poland, Mexico, Peru, Indonesia, Malaysia, India, Hong Kong, Greece, China, Colombia, Brazil and Czech Republic.

3.6 RESEARCH METHODOLOGIES USED IN PREVIOUS RESEARCH ON THE DETERMINANTS OF FPI

Estimation techniques that were used by prior empirical researchers on determinants of FPI are evaluated in Table 5.

Table 5: Evaluation of estimation techniques used in previous studies on determinants of FPI		
Estimation technique	Empirical researchers	Critique of the methodology
OLS	Al-Smadi (2018), Haider et al (2016), Agarwal (1997), Ahmad et al (2015), Badawi et al (2017), Chaudhry et al (2014), Aziz et al (2015), Jothirajan (2018), Ololade and Ekperiware (2015)	1. Assumes the existence of a linear relationship between the independent and the dependent variables. 2. Assumes there is no serial or autocorrelation between the error terms. 3. Assumes the explanatory variables and error terms are not correlated. 4. Assumes the model does not have any specification bias. In some cases, these assumptions are not applicable, thus making the OLS results inconsistent. 5. The approach does not take into account the fact that the dependent variable is influenced by its own lag. 6. The technique ignores the cross-sectional characteristics of the data. 7. It fails to address the endogeneity issues, which normally characterizes the relationship between dependent and independent variables.
Fixed effects	Singhania and Saini (2017)	1. It takes into account the cross-sectional and time series dimensions of the data. 2. There is more data variation which results in the estimators of the fixed effects being more efficient. 3. Produces more accurate results than cross-sectional approach because it contains more sample variability and degrees of freedom. 4. It is not capable of addressing the endogenous bias. 5. It does not address the dynamic nature of the dependent variable. 6. It can be used to predict the relationships between non-linear variables.
Random effects	Singhania and Saini (2017)	1. It takes into account the cross-sectional and time series characteristics of the data.

		2. There is more data variation, resulting in the estimators of the fixed effects being more efficient. 3. Produces more accurate results than cross-sectional approach because it contains more sample variability and degrees of freedom. 4. It is not capable of addressing the endogenous bias. 5. It does not address the dynamic nature of the dependent variable. 6. It can be used to model non-linear relationships.
Autoregressive distributive lag (ARDL)	Garg and Dua (2014), Karim et al (2016), Kumaraa and Dayaratne (2015), Adebisi and Arikpo (2017), Mehar and Hasan (2018)	1. Ignores the dynamic characteristics of the dependent variable. 2. Ignores the cross-sectional characteristics of the data. 3. Takes into account only the time series characteristics of the data. 4. Does not address the endogeneity problem. 5. Assumes the relationship between the independent and the dependent variables of the model follows a linear fashion.
Unrestricted vector auto regression (VAR) model	Wortmann (2010), Gumus et al (2013)	1. Ignores the dynamic characteristics of the dependent variable. 2. Ignores the cross-sectional features of the data. 3. Considers only the time series features of the data. 4. Does not address the endogeneity problem. 5. Assumes the relationship between the dependent and independent variable is linear.
Vector error correction model (VECM)	Chukwuemeka et al (2012), Mugableh and Oudat (2018)	1. Ignores the dynamic characteristics of the dependent variable. 2. Ignores the cross-sectional characteristics of the data. 3. Deals with time series data only. 4. Does not address the endogeneity problem. 5. Assumes the relationship between the dependent and independent variable is linear.

Granger causality tests	Raghavan and Selvam (2017), Mehar and Hasan (2018), Nwinee and Olulu-Briggs (2016)	1. Ignores the dynamic characteristics of the dependent variable. 2. Ignores the cross-sectional characteristics of the data. 3. Takes into account only the time series nature of the data. 4. Does not address the endogeneity problem. 5. Assumes the relationship between the dependent and independent variable is linear.
Two-stage least square approach	Osemene et al (2018)	1. Ignores the dynamic characteristics of the dependent variable. 2. Ignores the cross-sectional characteristics of the data. 3. Only considers the time series features of the data. 4. Does not address the endogeneity problem. 5. Assumes the relationship between the dependent and independent variable is linear. 6. The approach addresses the simultaneity bias and inverse causality, as in Osemene et al (2018:18).
Generalized autoregressive conditional heteroscedasticity (GARCH) – time series approach	Nwosa and Adeleke (2017), Waqas et al (2015)	1. Ignores the dynamic characteristics of the dependent variable. 2. Ignores the cross-sectional characteristics of the data. 3. Only makes use of time series characteristics of the data. 4. Does not address the endogeneity problem.
Dynamic GMM	Singhania and Saini (2017), Atobrah (2015)	1. Considers the fact that the dependent variable is influenced by its own lag. 2. It addresses the simultaneity bias aspect of the endogeneity problem. 3. It can be used to estimate non-linear relationships. 4. Baum et al (2003) argue that GMM estimators are efficient and reliable even in the presence of heteroscedasticity. 5. Not applicable in situations where the number of countries is fewer than the

		number of time periods (Roodman. 2009). 6. It ignores the impact of the lagged independent variables on the dependent variable. This weakness was addressed by using the lagged independent variable approach (robustness tests).

Source: Author's compilation

The current study addressed the weaknesses and gaps in the research methodologies by using static panel data analysis methods with the following characteristics: (1) able to predict non-linear relationships between variables, (2) take into account both the time series and cross-sectional dimension of data and (3) contain more sample variability and degrees of freedom. The study also employed the dynamic GMM estimation (Arellano and Bond. 1991) method, which is capable of dealing with the endogeneity bias and taking into account the dynamic nature of the dependent variable. The dynamic GMM method is also applicable to non-linear relationships between the variables and is suitable in cases where the number of observations is equal to or greater than the number of time periods. Unlike the majority of estimation techniques that have been used in earlier empirical research work on determinants of FPI, GMM estimators are reliable and efficient even in the presence of heteroscedasticity.

The current study used five panel data methods, namely the pooled OLS, FMOLS, fixed effects, dynamic GMM and the random effects procedure. No such study of the determinants of FPI has so far used these five methods at once for comparison and robustness purposes in as far as the author is aware. This study is the first of its kind to use these five panel data analysis methods to explore the effect of the combination between financial development and trade openness on FPI inflows into emerging markets.

3.7 GENERAL MODEL SPECIFICATION

Following theoretical (see Table 1) and empirical literature, major factors that influence FPI include trade openness, financial development, savings, inflation, economic growth,

external debt, population growth, exchange rates and interest rates. These determinants of FPI that are supported in literature (Garg and Dua. 2014; Haider et al. 2016; Al-Smadi. 2018; Hailu. 2010; Alesina and Dollar. 2000) are presented in equation 1.

FPI=f (FIN, OPEN, FDI, EXCH, GROWTH, SAV, INFL, POP, EXDEBT) [1]

Besides the literature being the main basis upon which these independent variables were selected, data availability was also a variable selection criterion used by the author. A research by Gumus et al (2013) on the relationship between macroeconomic variables and FPI included explanatory variables of FPI such as interest rates, market size, inflation rates, economic growth, exchange rates, government finance, tax rates, trade openness, rate of return and disclosure of information. These explanatory variables resemble more closely those that were selected for the current study.

3.8 EMPIRICAL MODEL SPECIFICATION

The empirical model employed for investigating the determinants of FPI is expressed as follows:

$$FPI_{i,t} = \beta_0 + \beta_1 FIN_{i,t} + \beta_2 OPEN_{i,t} + \beta_3 FDI_{i,t} + \beta_4 EXCH_{i,t} + \beta_5 GROWTH_{i,t} + \beta_6 SAV_{i,t} + \beta_7 INFL_{i,t} + \beta_8 POP_{i,t} + \beta_9 EXDEBT_{i,t} + \mu_{i,t} + \varepsilon_{it} \quad [2]$$

Where β_0 is the intercept term while $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$ and β_9 are the co-efficients to be estimated. ε_{it} is the random error term. The effect of the omitted variables in the data construction is represented by the error term (Mpofu. 2014). Following Tsaurai (2018a:105), the unobserved country specific and time invariant effect is represented by $\mu_{i,t}$ with subscripts t and i respectively standing for time and country. The model consists of nine explanatory variables, namely financial development (FIN), trade openness (OPEN), foreign direct investment (FDI), exchange rate (EXCH), economic growth (GROWTH), gross domestic savings (SAV), inflation (INFL), population growth (POP) and external debt (EXDEBT).

In summary, financial sector development has a significant positive impact on FPI inflows as found by Al-Smadi (2018), Bartels et al (2009), Kaur et al (2013) and Chakrabarti (2001). On the other hand, Dobbs et al (2013) argued that openness to trade does away with impediments to international mobility of capital. Alesina and Dollar (2000) are of the view that trade openness gives a country a competitive edge by providing positive investment climate signals to the international community, and in this way attracting foreign investors. It is for this reason that this research hypothesized that the combination of a high openness to trade and financial development in a host country enhances FPI inflows. This is consistent with one of the objectives of the current study, which is to investigate whether the complementarity between financial development and trade openness enhances FPI in emerging markets.

The following empirical model was used to test the impact of a complementarity between trade openness and financial development on FPI in emerging markets:

$$FPI_{i,t} = \beta_0 + \beta_1 FIN_{i,t} + \beta_2 OPEN_{i,t} + \beta_3 (FIN_{i,t}.\, OPEN_{i,t}) + \beta_4 FDI_{i,t} + \beta_5 EXCH_{i,t} + \beta_6 GROWTH_{i,t} + \beta_7 SAV_{i,t} + \beta_8 INFL_{i,t} + \beta_9 POP_{i,t} + \beta_{10} EXDEBT_{i,t} + \mu_{i,t} + \varepsilon_{it} \quad [3]$$

In keeping with Tsaurai (2017a), a significant positive co-efficient of the interaction term $(FIN_{i,t}.\, OPEN_{i,t})$ means that the complementarity between openness to trade and financial development attracts significant FPI into emerging markets.

Despite Barrell and Pain (1999) and Wheeler and Mody (1992) arguing that existing foreign investors provide a signal that the host country's business and investment climate is favourable, thereby attracting more foreign investment, existing empirical studies on the determinants of FPI have completely ignored such a theoretical view. The current study deviates from prior literature by taking into account the dynamic nature of foreign portfolio data (see equation 4).

$$FPI_{i,t} = \beta_0 + \beta_1 FPI_{i,t-1} + \beta_2 FIN_{i,t} + \beta_3 OPEN_{i,t} + \beta_4 + (FIN_{i,t}. OPEN_{i,t}) + \beta_5 FDI_{i,t} + \beta_6 EXCH_{i,t} + \beta_7 GROWTH_{i,t} + \beta_8 SAV_{i,t} + \beta_9 INFL_{i,t} + \beta_{10} POP_{i,t} + \beta_{11} EXDEBT_{i,t} + \mu_{i,t} + \varepsilon it \quad [4]$$

Where FPI_{it-1} is the lag in FPI, which represents the dynamic nature of FPI data.

3.9 DATA ANALYSIS

This section focuses on three major aspects of the study, namely pre-estimation diagnostics, diagnostic tests and panel regression estimators. Pre-estimation diagnostics include trend analysis, descriptive statistics and correlation analysis. Pre-estimation diagnostics should be done prior to the main data analysis in order to comprehend the character of the data used and to effect transformation of the data if need be (Tsaurai. 2018b). Diagnostic tests that must be done before the main data analysis are discussed in this section. A discussion on econometric techniques (panel regression estimators) that were used to estimate the empirical models explained in the preceding section also forms part of this section.

3.9.1 Trend analysis

Trend analysis indicates the direction of movement of the variables during a certain time frame. The comparison between the mean values of all variables used for each country and the overall mean of all variables is discussed for the period from 1995 to 2016. Such a trend analysis helped the author to identify the extreme or abnormal values, an issue that must be dealt with prior to main data analysis in order to avoid spurious and inconsistent results (Tsaurai. 2018c). The major weakness associated with trend analysis is that it does not show the actual relationships between variables (Tsaurai. 2017b).

3.9.2 Descriptive statistics

The main purpose of the descriptive statistics is to describe and understand the nature of the data being used (Tsaurai. 2018d). This section summarizes the descriptive statistics such as median, mean, range, skewness, minimum, maximum, standard deviation,

Jarque-Bera and Kurtosis. These statistics represent numerical and graphical ways of summarizing the data in a meaningful manner that facilitates easy interpretation of the data. In summary, the descriptive statistics describe the data through identifying the dataset's central position (mean, mode) and spread (standard deviation, maximum, minimum, range). These descriptive statistics are then presented in a tabular format in order to make comparisons across all the variables easier. The fact that no meaningful conclusions could be drawn from the descriptive statistics meant that further data analysis was done in order to comprehend the relationships between the variables under study.

3.9.3 Correlation analysis

There are four reasons for doing correlation analysis prior to the main data analysis: firstly, to establish whether there is a linear relationship between the variables; secondly, to ascertain the strength of that linear relationship between the variables; thirdly, to determine whether that linear relationship is a positive or a negative one; fourthly, to establish whether the multi-collinearity problem exists in the dataset used, in line with Stead's (1996) guidelines. Significance tests should be conducted, especially where the linear relationship is not sufficiently strong to use the variables in the main data analysis (Tembo. 2018). It was in this manner that the current study determined through hypothesis tests whether the linear relationship between the variables was sufficiently strong to justify the use of these variables in further econometric tests.

3.9.4 Diagnostic tests

Three diagnostic tests which were applied include panel unit root, co-integration and endogeneity tests. Panel unit root testing was performed on all variables using four methods, namely (1) the Fisher-Augmented Dick Fuller test (Madala and Wu. 1999), (2) Levin et al (2002), (3) Fisher-Phillip Peron test (Choi 2001) and (4) Im et al (2003). Across the four methods, panel unit root testing using both trend and intercept were performed at level and first difference. The null hypothesis is an assumption that all the tests have a unit root, thus rejecting the null hypothesis means that the data is stationary. The next step after ascertaining that the variables were stationary at first difference and non-stationary at level was to perform co-integration tests using the Kao (1999) procedure in

order to determine whether the variables used in the study were co-integrated. The optimum lag length of 2, based on Akaike's information criterion, Final predictor error and the Hanann-Quinn information criterion was used for the Kao co-integration tests. The Kao co-integration test assumes that no co-integration is the null hypothesis. Therefore, failure to accept the null hypothesis means that there is a long-run relationship between or among the variables used. Tsaurai (2018e) found that the existence of a long-run relationship between and among variables is the basis upon which further econometric estimations on the relationship between explanatory variables and the dependent variable can be undertaken. Endogeneity tests using the Hausman (1978) approach were also done in order to establish whether any explanatory variable was correlated with the error term, a finding which would render the ordinary least square estimator inconsistent and unreliable. The diagnostic test results are shown, discussed and explained in the next chapter.

3.9.5 Panel regression estimators applied

This sub-section explains the econometric techniques that were employed to estimate empirical models 2, 3 and 4. These include the fully modified ordinary least squares (FMOLS), pooled ordinary least squares, dynamic generalized methods of moments, fixed and random effects. The use of these five econometric techniques to estimate the empirical models was for comparison and robustness purposes. There are three major reasons why this study used panel data analysis methods. Firstly, panel data is characterized by more variability and degrees of freedom, both of which improve the accuracy of the results (Hsiao. 2007). Secondly, panel data have the space and time dimensions as they use time series, cross-section and longitudinal data (Tembo. 2018). Thirdly, Hsiao (2007) noted that panel data are advantageous because they take care of the influence of omitted variables and detect dynamic relationships that might be present between the variables studied.

Following Jawaid (2017), panel unit root, the co-integration and model estimation tests using FMOLS are the three steps involved in the FMOLS method. As already alluded to in the preceding sub-section on diagnostic tests, the variables (dependent and

explanatory variables) must be stationary at first difference and they should be co-integrated before the FMOLS estimation procedure is applied. The major advantage of using the FMOLS approach is that its estimators are consistent even if serial correlation and endogeneity exist (Phillip and Hansen 1990).

Vijayakumar et al (2010) found that under the pooled ordinary least squares (OLS) estimation procedure differences between estimated cross-sections are non-existent. In other words, the method assumes that there is no difference among the data matrices for all cross-sections. The Pooled OLS approach is the ordinary least square method applied to panel data. Pooled OLS is used only when the OLS's assumptions (no autocorrelation, no homoscedasticity and no multi-collinearity) are not violated (Tembo. 2018).

Park (2011) explains that the fixed effects model is characterized by four major features. Firstly, assuming the same variances and slope across individual groups, the fixed effects model explains the individual differences in the intercepts. Secondly, the intercept may change in order to capture each cross-sectional unit's individuality while the slope co-efficient remains constant. Thirdly, all the co-efficients and the intercept might be constant. Fourthly, both coefficients and the intercept might vary across time and individual units.

Two main assumptions of the random effects approach are that: (1) the cross sectional units which form the panel have the same mean value for the intercept and (2) individual differences in the units must be reflected by the composite error term (Tembo. 2018). The latter is composed of cross-section and time series error elements and the individual error term. Additional assumptions of the random effects approach are that autocorrelation and correlation between individual error terms is non-existent (Tembo 2018:98). FMOLS, random effects, fixed effects and pooled OLS approaches were used to estimate empirical models 2 and 3. A selection of the most appropriate panel data estimation method from the pooled OLS, fixed and random effects was not made since the study used all the three approaches alongside the FMOLS and dynamic generalized methods of moments (GMM) for comparison and robustness purposes. One of the major

shortcomings of these static panel data analysis methods (FMOLS, pooled OLS, fixed effects, random effects) is that they are less useful in cases where the dependent variable is dynamic in nature. In such a scenario, dynamic panel estimation procedures such as Arellano and Bond (1991)'s dynamic GMM approach are used. The dynamic GMM estimation procedure also addresses the endogeneity problem, an issue that static panel data analysis methods cannot solve (Tsaurai. 2017b). Azman-Saini et al (2010) noted that the dynamic GMM estimation technique does away with simultaneity bias triggered by the possibility that other explanatory variables might be endogenous. The dynamic GMM was used to estimate empirical model 4, presented in sub-section 3.8.

3.10 CHAPTER SUMMARY

The chapter addressed six key pillars of the research methodology. Firstly, the chapter discussed how the variables used in the study were selected, taking into account the availability of data and arguments presented in the literature. Secondly, a proxy for each variable used was chosen, based mainly on the superiority of the proxy and data availability considerations. Thirdly, the nature of the data, data collection and the sources were some of the methodological issues that were clarified in this chapter. Fourthly, the estimation techniques used by previous researchers who have studied the determinants of FPI were identified, described and evaluated with a view to choosing the best possible estimation technique for the current study. Fifthly, the estimation techniques chosen for the current study were described, explained and justified. Finally, the chapter provided an explanation of all the recommended sequential stages involved in data analysis. The next chapter discusses main data analysis in line with the empirical models and estimation techniques explained in this chapter.

CHAPTER 4: PRE-ESTIMATION DIAGNOSTICS

4.1 CHAPTER INTRODUCTION

This chapter focuses on describing the character of the data and preparing them for the main data analysis. The sequential order of the pre-estimation diagnostics performed in this study was mean trend analysis, descriptive statistics, correlation analysis, panel stationarity tests and, lastly, panel co-integration tests. While the first three pre-estimation diagnostics were used to ensure that the data did not lead to spurious results, stationarity tests allowed the researcher to ensure that the data were not volatile while co-integration tests established whether a long run relationship existed between or among the variables.

4.2 MEAN AND OVERALL MEAN TREND ANALYSIS (2002–2016)

The major aim of trend analysis of the mean values versus the overall mean is to identify the existence of extreme or abnormal values in the data set, a result which must be corrected in order to avoid spurious results as an outcome (Tsaurai. 2018f).

Table 6: Mean trends of emerging markets' variables during the period 2002–2016										
	FPI	OPEN	EXCH	FIN	FDI	GR	SAV	INFL	HCD	INFR
Argentina	6.31	33.06	4.99	14.34	1.80	9507.4	22.00	12.14	0.82	23.1
Brazil	1.12	25.77	2.40	50.63	2.89	8127.7	19.49	6.83	0.76	21.3
Colombia	5.27	36.59	2273.8	41.53	3.86	5252.7	19.24	4.78	0.74	14.6
Czech Republic	13.37	130.3	22.36	20.51	4.29	17010.5	31.50	1.92	0.87	24.7
Hong Kong	325.9	394.2	7.77	871.2	29.11	32690.3	28.94	2.66	0.90	59.3
Indonesia	0.94	51.65	10080	36.82	1.69	2450.31	31.90	7.12	0.68	9.23
India	0.06	44.55	50.41	71.30	1.72	1139.42	30.21	7.02	0.59	3.01
Mexico	2.53	60.37	12.03	32.30	2.65	8688.07	21.21	4.09	0.78	16.6
Malaysia	11.41	169.7	3.53	137.5	3.42	8003.71	39.37	2.33	0.78	16.4
Philippines	3.68	78.7	47.79	60.14	1.46	1982.62	16.20	3.94	0.69	3.84
Portugal	67.59	70.1	0.78	34.52	3.82	20343.1	15.35	2.04	0.85	41.9
Republic of Korea	10.23	85.6	1113.7	78.99	0.85	21590.8	34.28	2.55	0.90	53.9
Russia	2.35	53.0	34.49	52.99	2.59	8958.28	31.29	10.33	0.79	28.2
Turkey	0.27	51.3	1.74	28.28	1.79	8790.17	17.20	12.12	0.75	22.7
South Africa	33.15	59.7	8.82	228.8	1.42	5844.80	19.47	5.86	0.66	9.14
Overall mean	**32.28**	**89.64**	**910.94**	**117.3**	**4.22**	**10692**	**25.18**	**5.71**	**0.77**	**23.3**

Source: Author's compilation

Only three countries, namely Hong Kong, Portugal and South Africa had average FPI inflows greater than the overall average of 32.28% of GDP. Among these, Hong Kong and Portugal were outliers because their mean FPI inflows were far higher than the overall mean. On the other hand, Brazil, Argentina, Czech Republic, Colombia, Indonesia, India, Mexico, Malaysia, Philippines, Republic of Korea, Turkey and Russia had mean FPI inflows that were far lower than the overall mean FPI of 32.28% of GDP.

As far as trade openness was concerned, the Czech Republic, Hong Kong and Malaysia had higher mean trade openness than the overall mean of 89.64% of GDP. These countries were also outliers as their mean trade openness was considerably higher than

the overall mean. Argentina, Brazil and India were also outliers because their mean trade openness was far lower than the overall mean trade openness of 89.64% of GDP. In terms of exchange rates, Colombia and Indonesia were clearly outliers because their mean exchange rates far exceeded the overall mean exchange rate of 910.94. On the other hand, the mean exchange rates of the remaining countries were far lower than the overall mean exchange rate.

Using stock market capitalization proxy of financial development (FIN), only Hong Kong (871.2% of GDP), Malaysia (137.5% of GDP) and South Africa (228.8% of GDP) had mean stock capitalization above the overall mean stock market capitalization of 117.3% of GDP. Hong Kong and South Africa were outliers because their respective mean values of stock market capitalization far exceeded the overall mean value of stock market capitalization. The mean stock market capitalization for Argentina, Colombia, Czech Republic, Indonesia, Mexico, Portugal, Russia and Turkey was much lower than the overall mean stock market capitalization ratio of 117.3% of GDP. These countries were thus also regarded as outliers as far as stock market capitalization ratio was concerned.

Only two countries had mean FDI ratios exceeding the overall mean FDI ratio of 4.22% of GDP: The Czech Republic and Hong Kong. Of these two, Hong Kong was an outlier as its mean FDI ratio of 29.11% of GDP exceeded the overall mean FDI ratio by a very wide margin. Four nations whose mean GDP per capita was not only above but exceeded the overall mean GDP per capita of US$10 692 by a very high margin were Czech Republic, Portugal, Hong Kong and Republic of Korea. Of the remaining nations whose mean GDP per capita was lower than the overall mean, only Colombia, Indonesia, India and Philippines were outliers because their mean GDP per capita was much lower than the overall GDP per capita.

With regard to domestic savings as a ratio of GDP, eight nations had a mean savings ratio below the overall mean of 25.18%. These included Argentina, Brazil, Colombia, Mexico, Philippines, Portugal, Turkey and South Africa. Philippines (16.20% of GDP), Portugal (15.35% of GDP) and Turkey (17.20% of GDP) recorded the lowest mean

savings ratio but this was not low enough for them to be referred to as outliers. Malaysia was the only outlier as it had a mean savings ratio of 39.37% of GDP, which deviated by a wide margin from the overall mean savings ratio of 25.18% of GDP.

Countries whose mean inflation values were above and those whose were below the overall mean inflation value of 5.71% were almost evenly distributed. For example, there were seven countries (Argentina, Brazil, Indonesia, India, Russia, Turkey and South Africa) whose mean inflation values exceeded the overall mean inflation figure. Among these, Argentina (12.14%), Russia (10.33%) and Turkey (12.12%) were outliers. On the other hand, the Czech Republic, Hong Kong, Malaysia, Portugal and the Republic of Korea experienced a mean inflation rate that was furthest below the overall mean inflation during the study period (see Table 6).

In terms of human capital development, India was an outlier as its human capital development index was the furthest below the overall mean human capital development index of 0.77. Hong Kong (0.90) and the Republic of Korea (0.90) were also outliers whose mean human capital development index far exceeded the overall mean. The mean human capital development index of the remaining countries was situated around the overall mean.

Five nations whose mean infrastructural development level exceeded the overall mean of 23.3 fixed telephone subscriptions per 100 people included the Czech Republic, Portugal, Hong Kong, Republic of Korea and Russia. Of these, only Hong Kong (59.3), Portugal (41.9) and the Republic of Korea (53.9) could be regarded as outliers as their number of fixed telephone subscriptions deviated by a wider margin from the overall mean of fixed telephone subscriptions per 100 people. Colombia, Indonesia, India, Philippines and South Africa had the lowest mean infrastructural development levels, well below the overall mean value. The mean number of fixed telephone subscriptions per 100 people in these countries fell furthest below the overall mean; hence the study concluded that they were outliers.

In summary, it is quite evident from Table 6 that there was at least an outlier for each and every variable under study. Such a characteristic of the data used in the current study had to be addressed to limit the probability of an outcome the results of which were spurious (Aye and Edoja. 2017).

4.3 DESCRIPTIVE STATISTICS

Statistics such as median, maximum, mean minimum, range, skewness, standard deviation and kurtosis and the Jarque-Bera are used in this section to describe the nature and character of the data in the current study (see summarized results in Table 7).

Table 7: Descriptive statistics

	FPI	OPEN	EXCH	FIN	FDI	GR	SAV	INFL	HCD	INFR
Mean	32.3	89.6	910.9	117	4.22	10692	25.18	5.71	0.77	23.3
Median	4.36	59.1	12.8	44.3	2.27	8487	23.9	4.64	0.77	18.9
Maximum	426	455	13389	1254	58.5	43737	44.5	44.96	0.94	62.1
Minimum	0.01	22.1	0.68	5.67	0.06	480.6	13.5	0.11	0.52	1.84
Range	425.9	432.9	13388	1248	58.44	43256	31.0	44.85	0.42	60.3
Standard. deviation	83.6	91.0	2562	223.3	7.59	8967	7.78	4.87	0.09	16.5
Skewness	3.58	2.67	3.32	3.66	4.26	1.31	0.34	3.33	-0.29	0.91
Kurtosis	15.0	9.66	13.1	16.0	22.6	4.47	2.06	22.88	2.45	2.97
Jarque-Bera	1827	684	1375	2080	4287	84.4	12.6	4123	5.97	31.4
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
Observations	225	225	225	225	225	225	225	225	225	225

Source: Author's compilation from E-Views

The mean statistics for all variables were discussed in detail in the preceding section. The range values for FPI, trade openness, exchange rate, economic growth and financial development variables not only exceeded 100 but showed that there was a considerable difference between the minimum and maximum values (existence of abnormal values). Extreme values existed for exchange rate and economic growth data because their

standard deviation exceeded 1000, as Tsaurai (2018g) argued. Only human capital development data were skewed to the left, while the data for all other variables were skewed to the right. As reflected in Table 7, only the Kurtosis value for infrastructural development was close to 3, an indication that data for the remaining variables were not normally distributed (Tsaurai. 2018g:77). The fact that Jarque-Bera criterion's probabilities for all the variables was either zero or fairly close to zero was further concrete evidence that data for the variables did not follow a normal distribution (Tsaurai. 2017g).

4.4 CORRELATION ANALYSIS

This section investigates whether there was a prima facie association among and between the variables under study. The section also explores the strength and the significance of the relationship between the variables (see results in Table 8).

Table 8: Correlation analysis

	FPI	OPEN	EXCH	FIN	FDI	GR	SAV	INFL	HCD	INFR
FPI	1.00									
OPEN	0.88***	1.00								
EXCH	-0.13*	-0.15**	1.00							
FIN	0.95***	0.87***	-0.12*	1.00						
FDI	0.92***	0.84***	-0.10	0.89***	1.00					
GR	0.74***	0.69***	-0.24***	0.61***	0.67***	1.00				
SAV	0.04	0.34***	0.22***	0.14**	0.08	0.12*	1.00			
INFL	-0.21***	-0.31***	0.04	-0.19***	-0.17***	-0.33***	-0.15**	1.00		
HCD	0.41***	0.46***	-0.23***	0.27***	0.37***	0.73***	0.18***	-0.21***	1.00	
INFR	0.62***	0.56***	-0.20***	0.50***	0.54***	0.87***	0.16**	-0.19***	0.79***	1.00

Note: ***/**/* denotes statistical significance at the 1%/5%/10% level respectively.
Source: Author's compilation from E-Views

Although Table 8 contains all the results from the correlation analysis, what is of major interest and consistent with the major theme of the current study is how trade openness, exchange rates, financial development, economic growth, foreign direct investment,

inflation, domestic savings, human capital development and infrastructural development relate to FPI inflows.

It is evident from Table 8 that the relationship between FPI inflows and their determinants (according to literature review) is threefold. Firstly, variables such as financial development, economic growth, trade openness, foreign direct investment, human capital and infrastructural development were each positively and significantly correlated with FPI inflows. The findings follow the theoretical literature underpinning the determinants of FPI, as explained in detail in the preceding two chapters. Secondly, exchange rates and inflation were negatively and significantly correlated with FPI inflows, as expected. This finding also resonates with the majority of the literature that explains the relationship between exchange rates and FPI (Haider et al. 2016; Biglaiser and DeRouen. 2006) and inflation and FPI inflows (Al-Smadi 2018). Thirdly, a non-significant but positive correlation between savings and FPI inflows was detected, in support of prior findings by Ferreira and Laux (2009), Abdelhafidh (2013) and Masood and Mohsin (2002).

These results are not conclusive and they are less useful because of the following three reasons. (1) They merely show that a relationship or correlation exists without showing the direction of such a relationship, (2) they show the correlation between two variables excluding the control variables and (3) they wrongly assume that the relationship between the two variables follows a linear fashion. As Tsaurai (2017b) demonstrates, the main reason that correlation analysis is useful is that it checks whether there is or is not a multi-collinearity problem between and among the variables being studied. The multi-collinearity problem leads to inaccurate results and should be decisively dealt with before the main data analysis (Tsaurai. 2017b). Following Stead's (1996) guidelines, the problem of multi-collinearity was detected between the following variables: (1) trade openness and FPI, (2) financial development and FPI, (3) FDI and FPI, (4) openness to trade and financial development, (5) FDI and trade openness, (6) FDI and financial development and (7) economic growth and infrastructural development.

It is quite clear from sub-section 3.2, 3.3 and 3.4 above that three problems existed in the data of some variables under study, namely (1) the existence of extreme or abnormal values, (2) a multi-collinearity problem and (3) the fact that the data for the variables failed to follow a normal distribution. Such problems, if not resolved, render the final results unreliable in decision-making purposes (Tsaurai. 2018f). Hair et al (2014) and Aye and Edoja (2017) argue that the three issues can be dealt with by transforming the data into natural logarithms before analyzing it. This is how the current study resolved these three econometric challenges.

4. 5 PANEL STATIONARITY TESTS

As in Tsaurai (2018f), those variables for which data are not significant are referred to as non-stationary. Table 9 shows that not all variables were stationary at level. In contrast, at first difference, the data for all the variables were significant, an indication that all variables were integrated of the first order (Jiang and Liu. 2014). Once this condition (stationarity at first difference) had been satisfied, the existence of a long-run relationship among the variables could be investigated (Tsaurai and Odhiambo. 2013).

Table 9: Panel root tests – Individual intercept				
Level				
	LLC	IPS	ADF	PP
FPI	-2.8351***	-0.1951	27.1414	36.8602
OPEN	-1.4434*	0.3547	28.8511	33.7851
EXCH	3.5121	2.4177	23.9086	33.7645
FIN	-5.2783***	-3.5126***	58.9637***	114.085***
FDI	-5.1669***	-3.6294***	62.6772***	110.362***
GR	-6.3735***	-3.1600***	56.8773***	114.565***
SAV	-1.7760**	-1.5947*	51.2959***	63.2198***
INFL	-7.0505***	-3.5090***	62.2692***	70.0545***
HCD	-7.5115***	-4.8112***	74.7432***	85.8713***
INFR	0.6723	1.4441	19.3040	24.5556
First difference				
FPI	-9.4953***	-6.8878***	102.865***	174.366***
OPEN	-5.6504***	-4.8258***	76.8421***	158.017***
EXCH	-4.3675***	-2.1406**	46.4240**	85.6862***
FIN	-10.4013***	-8.4194***	123.756***	263.654***
FDI	-6.4584***	-7.6392***	114.197***	231.187***
GR	-5.0967***	-2.2651**	46.4404**	85.4905***
SAV	-8.5343***	-6.0908***	93.7636***	149.301***
INFL	-10.8140***	-8.2392***	120.953***	188.706***
HCD	-15.0068***	-10.7789***	155.612***	278.189***
INFR	-1.7744**	-1.7320**	46.8358**	64.6366***

Note: LLC, IPS, ADF and PP stand for Levin, Lin and Chu (2002); Im, Pesaran and Shin (2003); ADF Fisher Chi Square and PP Fisher Chi Square tests respectively. *, ** and *** denote 10%, 5% and 1% levels of significance, respectively.

Source: Author's compilation from E-Views

4. 6 PANEL CO-INTEGRATION TESTS

The dependent variable in this study was FPI and the explanatory variables included trade openness, exchange rates, financial development, foreign direct investment, economic growth, inflation, human capital development, infrastructure development and savings. Panel co-integration tests investigate whether a long-run relationship exists among all the variables studied (see Table 10 for results).

Table 10: Kao Residual Co-integration Test – Individual intercept		
	T-statistic	Probability
Augmented Dickey-Fuller (ADF)	-2.3761	0.0087

Source: Author's compilation from E-Views

The Kao residual co-integration test results failed to reject at 1% significance level the alternative hypothesis that states that the variables being studied were co-integrated. This finding paved the way for the main data analysis that is discussed in the following chapter.

4.7 CHAPTER CONCLUSION

Pre-estimation diagnostics included correlation analysis, descriptive statistics, mean and overall mean trend analysis, panel stationarity and panel co-integration tests. In summary, the correlation analysis found that there was a multi-collinearity problem, while the mean and overall mean trend analysis observed that there were extreme values in the data for some of the variables. The descriptive statistics showed that there were extreme/abnormal values in the data for some variables and that the data for other variables were not normally distributed. In the light of this finding the current study converted all data sets into natural logarithms in order to effectively deal with the three econometric problems associated with the character of the data. After the data had been transformed into natural logarithms, panel unit root and panel co-integration tests were conducted. The study found that the data for all the variables were stationary at first difference. Put differently, all the variables were integrated of order 1, thus preparing the way for panel co-integration tests. The Kao residual co-integration test revealed that there existed a long-run relationship among the variables studied, thereby allowing the data analysis to be performed, the results of which are shown in the next chapter.

CHAPTER 5: DATA ANALYSIS: DISCUSSION AND INTERPRETATION OF RESULTS

5.1 CHAPTER INTRODUCTION

This chapter provides the discusses and interprets the results of the analysis. Econometric estimation techniques discussed and explained in chapter 3 were employed to analyze data with the EViews software. The results of the study were organized into three models. The first model uses a stock market development proxy (stock market capitalization ratio), the second uses a banking sector development proxy (domestic credit to private sector by banks as a ratio of GDP) and the third model makes use of the bond sector development proxy (outstanding domestic private debt securities to GDP). The whole chapter is structured as follows: Main data analysis is covered in section 5.2, section 5.3 discusses results from robustness tests and section 5.4 summarizes the chapter.

5.2 DATA ANALYSIS

As mentioned above in section 5.1 (chapter introduction), the only feature distinguishing models 1 to 3 is the proxy of the financial sector development that was used. Tables 1, 2 and 3 respectively show results of models 1, 2 and 3. Stock market capitalization ratio, domestic credit to private sector by banks as a ratio of GDP and outstanding domestic private debt securities to GDP were the financial development proxies used in models 1, 2 and 3 respectively.

Table 11: Panel data analysis results – Model 1					
	Fixed effects	**Random effects**	**Pooled OLS**	**Fully modified OLS (FMOLS)**	**Dynamic GMM**
$FPI_{i,t-1}$	-	-	-	-	0.9616***
FIN	1.7901***	1.5961***	1.1287**	1.2237***	0.1717
OPEN	2.2158***	2.1126***	1.3617**	2.1834***	0.0178
FIN.OPEN	-0.3145***	-0.2725***	-0.1095	-0.8606***	-0.0179
EXCH	0.4519***	0.2276*	0.1137***	0.6110**	0.0037
FDI	-0.0137	-0.0262	0.0291	0.0331	0.0013
GROWTH	0.5272***	0.5765***	0.7828***	0.4991***	-0.1033**
SAV	-0.6813*	-0.7981**	-2.3483***	-0.9623*	0.0261
INFL	0.0788	0.0770	-0.2210*	0.1115	-0.0449
HCD	0.6109	1.0723	1.2302*	1.0053	0.8214**
INFR	0.0446	0.0845	-0.0408	0.3034	0.0552
Number of countries	15	15	15	15	15
Number of observations	225	225	225	225	225
Adjusted R-squared	0.9554	0.3039	0.6922	0.9404	0.9830
F-statistic	200.82	10.78	51.37	-	J-static = 213
Prob (F-statistic)	0.00	0.00	0.00	-	Prob (J-statistic) =0.00

***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

Source: Author's compilation from E-Views

Under the dynamic GMM approach in model 1, the lag of the FPI had a significant positive effect on FPI, consistent with Wheeler and Mody (1992) whose study argued that new foreign investors are attracted into an economy if there are existing foreign investors in that economy because they can easily advantage from the positive spillovers generated by the already existing foreign investors. The finding is similar to the observations by Singhania and Saini (2017: 202). Financial development (proxied by stock market capitalization as a ratio of GDP) had a significant positive influence on FPI under the random effects, fixed effects, pooled OLS and the FMOLS in model 1, consistent with

Mehmood and Hanif (2014) whose study argued that bullish stock markets attract foreign portfolio inflows as foreign investors aim at taking advantage of higher returns.

In model 1, under the random effects, fixed effects, pooled OLS and the FMOLS, trade openness had a positive and significant effect on FPI. This finding supports an argument by Dobbs et al (2013), who explain that openness to trade facilitates FPI by removing obstacles to international capital mobility. Moreover, both openness to trade and financial development influenced FPI in a positive but non-significant manner under the dynamic GMM estimation technique.

The interaction between openness to trade and financial development had a significant negative effect on FPI under FMOLS, random and random effects. FPI was negatively but insignificantly influenced by the combination of financial development and openness to trade under the pooled OLS and the dynamic GMM. The results suggests that developed financial markets are liquid enough to enable foreign investors to sell off their investments when the need arises (Al-Smadi. 2018) and to repatriate their profits and capital as a result of the absence of any obstacle that curtails international capital movement (trade openness) (Dobbs et al. 2013).

The current study shows that exchange rates had a significant positive effect on FPI in model 1 under the FMOLS, random effects, pooled OLS and fixed effects. On the other hand, FPI was positively but insignificantly affected by exchange rates under the dynamic GMM. These findings resonate with those of Haider et al (2016), who argue that depreciation of the local currency is associated with a fairly stable macro-economic environment that favours foreign portfolio investors.

In support of an argument by Hailu (2010), who explained that if financial markets are shallow, FDI crowds out FPI, model 1 found that FDI negatively affected FPI under the random and fixed effects. Pooled OLS, FMOLS and dynamic GMM produced results that show that FDI had an insignificant positive impact on FPI. These findings are in keeping

with most theoretical literature that has observed that FDI and FPI move together as they are both classified as foreign investment.

Under the random effects, fixed effects, pooled OLS and FMOLS, the growth of the economy had a significant positive influence on FPI. This finding consolidates an argument by Al-Smadi (2018) that higher levels of economic growth boost the amount of corporate profits earned, thus attracting foreign portfolio investors into the capital market in order to earn the ensuing higher investment returns. The result under the dynamic GMM that showed that FPI was negatively but significantly affected by economic growth resonates with Leong and Wickramanayake's (2004) argument, that as GDP levels go up, local people prefer to buy back domestic securities from foreign portfolio investors thus chasing out both potential and existing foreign investors.

The impact of savings on FPI, which was observed to be significantly negative under the fixed effects, pooled OLS, random effects and FMOLS contradicts the available literature (Abdelhafidh. 2013; Ferreira and Laux. 2009). In this study, savings had a non-significant positive effect on FPI under the dynamic GMM approach, in line with Masood and Mohsin's (2002) findings in the case of Pakistan. Model 1 results showed that inflation had an insignificant positive effect on FPI under the FMOLS, random and fixed effects. In contrast, the pooled OLS approach showed that FPI was negatively but significantly affected by inflation. Inflation also had a non-significant negative effect on FPI under the dynamic GMM method. A negative influence of inflation on FPI was also found by Al-Smadi (2018), in whose study high inflation was found to reduce the profitability levels of corporations thereby repelling foreign portfolio investors from participating in such an economy.

Under FMOLS, fixed and random effects, FPI was positively but insignificantly affected by human capital development while human capital development's impact on FPI under the pooled OLS and dynamic GMM was positive and significant. These results follow those of Dunning (1988), who argued that locational advantages of foreign direct investment or any form of foreign investment include human capital development.

The influence of infrastructural development on FPI was found to be non-significantly positive under the random effects, fixed effects, FMOLS and the dynamic GMM. Although literature on the direct impact of infrastructure development on FPI is fairly scarce, the infrastructural development led economic growth hypothesis has been supported in the literature (Ashenafi. 2017; Nedozi et al. 2014). Al-Smadi (2018) argued that high economic growth is an indication of the prevailing favourable investment climate and attracts foreign portfolio investors. On the other hand, the pooled OLS approach in model 1 shows results that support the non-significant negative influence of infrastructural development on FPI. This result is consistent with Hailu's (2010) view that investors prefer either FDI or FPI, depending on the available features of the host country. In this case, higher levels of infrastructural development may have attracted FDI at the expense of FPI.

Table 12: Panel data analysis results – Model 2					
	Fixed effects	**Random effects**	**Pooled OLS**	**Fully modified OLS (FMOLS)**	**Dynamic GMM**
$FPI_{i,t-1}$	-	-	-	-	0.9726***
FIN	2.5800***	2.4054***	-1.4640*	1.0362***	0.0832
OPEN	2.2415***	2.0472***	-0.8145	1.8470***	-0.0282
FIN.OPEN	-0.7388***	-0.6753***	0.4669**	-1.4212***	-0.0011
EXCH	0.2641	0.1153	0.1154***	0.3309	0.0021
FDI	0.0232	0.0114	0.0314	0.0517	0.0119
GROWTH	0.8425***	0.8460	0.7613***	0.9206***	-0.1285***
SAV	-0.5026	-0.5965*	-2.1419***	-0.7125	0.0852
INFL	0.0301	0.0305	-0.2184*	0.0090	-0.0287
HCD	0.5528	0.9364	2.8991**	0.5694	0.6188*
INFR	-0.0637	0.0090	-0.1189	0.0181	0.0570
Number of countries	15	15	15	15	15
Number of observations	225	225	225	225	225
Adjusted R-squared	0.9521	0.2580	0.6682	0.9386	0.9825
F-statistic	186.45	8.79	46.12	-	J-static = 213
Prob (F-statistic)	0.00	0.00	0.00	-	Prob (J-statistic) =0.00

***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

Source: Author's compilation from E-Views

As in model 1, FPI was positively and significantly affected by its own lag in model 2 under the dynamic GMM approach. This finding resonates with Barrell and Pain (1999), whose study observed that the availability of foreign investors shows that the investment climate is good in the host country. In model 2, financial development as proxied by domestic credit to private sector by banks (% of GDP) had a significant positive influence on FPI under the FMOLS, fixed and random effects. Yet the impact of financial development on FPI in the same model under the dynamic GMM approach was positive but non-

significant. These findings support Bartels et al's (2009) view that financial markets enhance the mobility of international capital from one country to another through the provision of useful, efficient and less costly information to the potential foreign investors. In contrast to the majority of the literature on this subject, the pooled OLS results showed that FPI was negatively but non-significantly influenced by financial development in model 2.

In model 2, the random effects, FMOLS and fixed effects approaches saw trade openness influencing FPI in a significant positive manner, in line with arguments advanced by Alesina and Dollar (2000). On the other hand, pooled OLS and dynamic GMM showed that trade openness had an insignificant negative effect on FPI in model 2, as in Wortmann's (2010:71) study. This finding is similar to those of a study done by Masood and Mohsin (2002), which found that trade openness negatively impacted on FPI in Pakistan.

The combination between financial development and trade openness (interaction term) under the random effects, fixed effects and FMOLS methods in model 2 had a significant negative impact on FPI. The interaction term also had an insignificant negative impact on FPI under the dynamic GMM method in this model. These findings are supported in the literature, in a combination of arguments by Al-Smadi (2018) and Dobbs et al (2013). However, FPI was found to be significantly positively influenced by the combination between trade openness and financial development under the pooled OLS approach. Most of the literature shows that financial development (Bartels et al. 2009; Kaur et al. 2013; Chakrabarti. 2001) and trade openness (Alesina and Dollar. 2000; Dobbs et al. 2013) separately and individually attracts FPI inflows. The author's view is that a country in which financial development and openness to trade is high is likely to attract more FPI inflows, in line with these findings.

The study showed that exchange rates had an insignificant but positive influence on FPI under the FMOLS, random effects, dynamic GMM and fixed effects in model 2. FPI was found to be positively and significantly affected by exchange rates under the pooled OLS

in the same model. These results resonate with Haider et al's (2016) views. Across all the five econometric estimation techniques in model 2, FDI had an insignificant positive effect on FPI, in line with most theoretical literature, which argues that FDI and FPI move in tandem because they are attracted by similar host country characteristics.

Model 2 shows that the growth of the economy positively but significantly influenced FPI under the fixed effects, pooled OLS and FMOLS. Yet FPI was positively but insignificantly affected by economic growth under the random effects in the same model. These findings appear to confirm Garg and Dua's (2014:20) argument that higher economic growth provides a stable investment climate that attracts foreign investors. Both fixed effects and FMOLS methods showed that savings had a non-significant negative impact on FPI, while random effects and pooled OLS indicated that FPI was negatively but significantly affected by savings. These results support findings by Masood and Mohsin (2002), who conducted a similar study using Pakistan as a unit of analysis. The dynamic GMM, however, produced results showing that savings had an insignificant positive influence on FPI, in support of findings by Abdelhafidh (2013) and Ferreira and Laux (2009).

In contrast to most literature on the subject, in this model inflation had an insignificant positive impact on FPI under the FMOLS, fixed and random effects. Pooled OLS shows that inflation had a significant negative effect on FPI and the dynamic GMM indicated that FPI was negatively influenced by inflation in a non-significant manner. These results resemble those of Haider et al (2016:144).

A non-significant positive relationship running from human capital development towards FPI was detected under the fixed effects, random effects and FMOLS methods in model 2. Yet pooled OLS and the dynamic GMM showed that human capital development had a significant positive impact on FPI in the same model. Fixed effects and pooled OLS in model 2 showed that infrastructural development influenced FPI in a non-significant negative manner, as in Hailu's (2010) argument on the relationship between FDI, FPI and other host country characteristics, explained above. Yet random effects, FMOLS and the dynamic GMM approaches in model 2 showed a non-significant positive relationship

running from infrastructural development towards FPI. This finding is for the most part in keeping with the theoretical literature, which holds that infrastructure development is one of the locational advantages of foreign investment (Dunning. 1977).

Table 13: Panel data analysis results – Model 3

	Fixed effects	Random effects	Pooled OLS	Fully modified OLS (FMOLS)	Dynamic GMM
$FPI_{i,t-1}$	-	-	-	-	0.9688***
FIN	1.4028***	1.3293***	0.0576	2.3436***	-0.0496
OPEN	1.6787***	1.7512***	1.4563***	2.4328***	-0.0168
FIN.OPEN	-0.3734***	-0.3491***	0.0810	-0.6188***	0.0176
EXCH	0.2183	0.0864	0.1763***	0.2942	0.0061
FDI	0.0129	0.00001	0.1016	0.0219	0.0059
GROWTH	0.6951***	0.7309***	0.5290***	0.6793***	-0.1111**
SAV	-0.1640	-0.3154	-0.9852	-0.2609	-0.0021
INFL	0.0251	0.0230	-0.0143	0.0585	-0.0329
HCD	0.4543	0.8814	1.1325	0.0771	0.3356
INFR	-0.0589	0.0410	0.2853	0.0742	0.0750
Number of countries	15	15	15	15	15
Number of observations	225	225	225	225	225
Adjusted R-squared	0.9524	0.2677	0.7092	0.9388	0.9823
F-statistic	187.55	9.19	55.64	-	J-static = 213
Prob (F-statistic)	0.00	0.00	0.00	-	Prob (J-statistic) =0.00

***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

Source: Author's compilation from E-Views

As in model 1 and 2, the lag of FPI under the dynamic GMM approach had a significant positive effect on FPI in model 3. Using outstanding domestic private debt securities to GDP as a financial development measure, financial development positively but significantly affected FPI under FMOLS, random and fixed effects. Under the pooled OLS

approach, a non-significant positive relationship running from financial development to FPI was observed in this model. These results are supported by literature that states that when bond sector development is high, foreign investors chose to invest in a portfolio of financial assets rather than in FDI. In contrast to literature (Hailu. 2010), the dynamic GMM method showed that financial development influenced FPI in a non-significant negative manner.

A significant positive relationship running to FPI from trade openness was detected in model 3 under the random effects, pooled OLS, FMOLS and fixed effects, in line with Dollar (2000). As in Masood and Mohsin (2002) but in contrast to the majority of the literature on the subject, trade openness was observed to have a non-significant negative influence on FPI in this model under the dynamic GMM approach.

As in models 1 and 2, in model 3 the combination between openness to trade and financial development (interaction term) negatively but significantly affected FPI under the fixed effects, FMOLS and the random effects. However, a non-significant positive relationship running from the interaction term towards FPI was observed under both the pooled OLS and the dynamic GMM.

Exchange rates had an insignificant positive effect on FPI in model 3 under the fixed effects, FMOLS, dynamic GMM and random effects. Pooled OLS results showed a significant positive relationship running from exchange rates to FPI, in line with Haider et al (2016). Across all the five econometric estimation techniques in model 3, FDI had an insignificant positive influence on FPI, in keeping with most theoretical predictions which state that FDI and foreign portfolios complement each other.

A significant positive relationship running from economic growth to FPI in model 3 was observed under the random effects, fixed effects, pooled OLS and FMOLS, a finding generally supportive of Al-Smadi's (2018:331) theory. On the other hand, the dynamic GMM showed that FPI was negatively and significantly affected by economic growth. This result supports Leong and Wickramanayake's (2004) view that higher GDP per capita

enhances locals' ability to buy back the domestic financial securities from foreign investors, thus curtailing prospective FPI.

In contrast to the available literature, savings had a non-significant negative influence on FPI in model 3 across all five econometric estimation methods used in this study. Moreover, an insignificant positive relationship running from inflation towards FPI was detected under random effects, fixed effects and the FMOLS. On the other hand, the pooled OLS and the dynamic GMM methods showed that inflation had a non-significant negative influence on FPI, a similar finding to those of Haider et al (2016) and Al-Smadi (2018:331).

The current study noted that human capital development non-significantly positively affected FPI in model 3 across all the five econometric methods used. Random effects, pooled OLS, FMOLS and the dynamic GMM all showed an insignificant positive relationship running from infrastructural development to FPI. In contrast, the fixed effects approach showed that infrastructural development negatively but insignificantly influenced on FPI (Hailu 2010) in that foreign investors prefer FDI to FPI if the host country is characterized by high levels of infrastructural development.

5.3 ROBUSTNESS TESTS

Tsaurai's (2018h) study assumed that independent macroeconomic variables take a long time (at least one year) to have a significant influence on the dependent macroeconomic variable. In the light of this, the current study used the lagged independent variable for robustness checks (see results in Tables 14, 15 and 16). Matthew and Johnson (2014) argued that the results of a lagged independent variable approach are more accurate because the method correctly assumes that the impact of one macroeconomic variable on another is not instantaneous.

Table 14: The lagged independent variable approach (t-1) – Model 1				
	Fixed effects	**Random effects**	**Pooled OLS**	**Fully modified OLS (FMOLS)**
FIN	1.0761**	1.0328**	1.0428**	1.9834***
OPEN	1.7538***	1.8098***	1.4192***	1.8342***
FIN.OPEN	-0.1982**	-0.1885**	-0.1062	-0.7381***
EXCH	0.0712	0.0182	0.1090***	0.2280
FDI	-0.0258	-0.0290	0.0686	-0.0452
GROWTH	0.5199***	0.5457***	0.7439***	0.4973***
SAV	-0.4844	-0.5510	-2.2009***	-0.8420
INFL	0.0806	0.0797	-0.2469**	0.1812*
HCD	-0.5619	-0.3179	1.3495	0.2577
INFR	0.1797	0.2465	0.0337	0.4869*
Number of countries	15	15	15	15
Number of observations	225	225	225	225
Adjusted R-squared	0.9530	0.2809	0.6832	0.9398
F-statistic	190.42	9.75	49.30	-
Prob (F-statistic)	0.00	0.00	0.00	-

***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

Source: Author's compilation from E-Views

A significant positive relationship running to FPI from financial development was noted in models 1, 2 and 3 under the FMOLS, random and fixed effects methods used for robustness tests. The same finding was detected in model 1 under the pooled OLS method. Furthermore, a non-significant positive relationship running from financial development towards FPI was also noted in model 3 under the pooled OLS procedure. As noted above, these results support arguments put forward by Al-Smadi (2018), Bartels et al (2009), Kaur et al (2013) and Chakrabarti (2001). In contrast to much of the literature on the subject, model 2's results showed that the influence of financial development on

FPI was negative but non-significant under the pooled OLS method. This finding is similar to that of Gordon and Gupta's (2004) study on India.

Trade openness had a significant positive impact on foreign portfolio in all three models under the random effects, fixed effects and the FMOLS approaches. Similar results were obtained in models 1 and 3 under the pooled OLS method, all of which were supported by the literature (Dobbs et al. 2013; Alesina and Dollar. 2000). However, in model 2 under the pooled OLS, trade openness had a negative but insignificant impact on FPI, in line with Masood and Mohsin's (2002) findings.

With regard to the interaction term, the complementarity between trade openness and financial development was observed to have a significant negative influence on FPI under the random effects, FMOLS and fixed effects, across all the three models. Similar results were observed in model 2 under the pooled OLS approach. Moreover, FPI was found to have been negatively but insignificantly influenced by the interaction between openness to trade and financial development in model 1 under the pooled OLS econometric estimation approach. This finding resonates with an argument proposed by Al-Smadi (2018), who argued that development financial markets are more liquid, enabling already existing foreign portfolio investors to easily exit the financial market. This is especially so if the country is characterized by high levels of trade openness, which allows them to move capital from one country to another (Dobbs et al. 2013). In contrast, the impact of the interaction between financial development and trade openness on FPI in model 1 was found to be negative but non-significant under the pooled OLS method.

Results defining the relationship between exchange rates and FPI were categorized into three groups. Firstly, model 1 showed that the influence of exchange rates on FPI was positive but insignificant under the random effects, fixed effects and FMOLS. Secondly, exchange rates had a significant positive influence on FPI across all three models under the pooled OLS method. Both results are in keeping with Haider et al's (2016) view explained earlier in detail and are supported by Onuorah and Akujuobi (2013). Thirdly, models 2 and 3 showed a non-significant negative relationship running from exchange

rates to FPI under the random effects, FMOLS and fixed effects methods, a finding that follows Al-Smadi's (2018) argument that local currency depreciation triggers higher levels of inflation, which in turn wipe out the value of the return on investment.

Table 15: The lagged independent variable approach (t-1) – Model 2				
	Fixed effects	**Random effects**	**Pooled OLS**	**Fully modified OLS (FMOLS)**
FIN	2.5588***	2.4273***	-0.9054	1.0934***
OPEN	1.8924***	2.7312***	-0.3440	1.8279***
FIN.OPEN	-0.6743***	-0.6313***	0.3472*	-1.3927***
EXCH	-0.0560	-0.0461	0.1074***	-0.1610
FDI	-0.0082	-0.0102	0.0925	-0.0288
GROWTH	0.6735***	0.6769***	0.7252***	0.8291***
SAV	-0.4770	-0.5026	-1.9532***	-0.7221
INFL	0.0578	0.0524	-0.1950	0.0769
HCD	-0.5964	-0.4068	1.3828**	0.0178
INFR	0.2257	0.2957*	-0.0809	0.2802
Number of countries	15	15	15	15
Number of observations	225	225	225	225
Adjusted R-squared	0.9537	0.2920	0.6707	0.9415
F-statistic	193.47	10.24	46.63	-
Prob (F-statistic)	0.00	0.00	0.00	-

***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

Source: Author's compilation from E-Views

FDI was observed to have an insignificant negative effect on FPI under the FMOLS, random and fixed effects in models 1, 2 and 3, yet a non-significant positive relationship running towards FPI from FDI was detected under the pooled OLS estimation technique in all three models. The growth of the economy had a significant positive effect on FPI in all three models across all four econometric estimation approaches, a finding which is supported in the results obtained by Bayai and Nyangara (2013) and Igwemeka et al

(2015). FPI was negatively but non-significantly affected by savings in all models under the random effects, FMOLS and fixed effects. Moreover, the pooled OLS approach in all the three models produced results that showed that savings had a significant negative impact on FPI. The results on the influence of savings on FPI are in contrast to similar studies by Masood and Mohsin (2002), Ferreira and Laux (2009) and Abdelhafidh (2013).

In model 1, inflation affect FPI in the following ways (1) an insignificant positive effect on FPI under the random and fixed effects, (2) a significant positive effect on FPI under the FMOLS approach, in support of Soharwardi et al (2018) and (3) a significant negative effect on FPI under the pooled OLS. In models 2 and 3, inflation had an insignificant positive effect on FPI under the fixed effects, FMOLS and random effects. On the other hand, FPI was negatively but insignificantly affected by inflation under the pooled OLS method in models 2 and 3, in line with most of the literature on the subject matter.

Table 16: The lagged independent variable approach (t-1) – Model 3

	Fixed effects	**Random effects**	**Pooled OLS**	**Fully modified OLS (FMOLS)**
FIN	1.4390***	1.3513***	0.2840	2.0714***
OPEN	0.4592***	1.7493***	1.5965***	1.0237***
FIN.OPEN	-0.3836***	-0.3566***	0.0265	-0.5858***
EXCH	-0.0132	-0.0281	0.1592***	-0.1339
FDI	-0.0050	-0.0104	0.1344	-0.0260
GROWTH	0.6473***	0.6626***	0.4614***	0.6354***
SAV	-0.1618	-0.2217	-1.3482***	-0.2917
INFL	0.0361	0.0337	-0.0305	0.0894
HCD	-0.8938	-0.6261	0.3028	-0.7806
INFR	0.1149	0.2146	0.3781*	0.2483
Number of countries	15	15	15	15
Number of observations	225	225	225	225
Adjusted R-squared	0.9550	0.3051	0.7133	0.9416
F-statistic	198.87	10.84	56.74	-

Prob (F-statistic)	0.00	0.00	0.00	-

***, ** and * denote 1%, 5% and 10% levels of significance, respectively.
Source: Author's compilation from E-Views

Models 1, 2 and 3 showed that human capital development negatively but non-significantly affected FPI under both the random and fixed effects. This result was replicated under the FMOLS estimation procedure in model 3 only. Under the pooled OLS procedure, an insignificant positive relationship running from human capital development towards FPI was observed in model 1 and 3. The same finding was observed under the FMOLS approach in models 1 and 2. Moreover, model 2 under the pooled OLS produced results showing that FPI was positively and significantly influenced by human capital development, in support of the locational advantage theory of foreign investment advanced by Dunning (1988).

The results of the influence of infrastructural development on FPI can be divided into three categories. Firstly, a non-significant positive relationship in (1) all three models under the fixed effects, (2) in models 1 and 3 under the random effects, (3) in model 1 under the pooled OLS approach and (4) in models 2 and 3 under the FMOLS approach. Secondly, there was a significant positive relationship, in model 2 under the random effects, in model 3, under the pooled OLS, and in model 1 under the FMOLS estimation procedure. Thirdly, there was a non-significant negative relationship in model 2 under the pooled OLS estimation approach.

The results of the random effects under both main data analysis and robustness tests cannot be relied upon as the econometric estimation technique accounts for very little of the relationship between explanatory variables and FPI (see Adjusted R-squared statistic). For instance, the random effects explain only 28.09% in model 1, 29.20% in model 2 and 30.51% in model 3 of the relationship between FPI and its explanatory variables. These statistics are too low to enable the author to come to any meaningful conclusion about the relationship between FPI and its explanatory variables. On the other hand, the adjusted R-squared statistics for the fixed effects, pooled OLS, FMOLS and the dynamic GMM in all three models in both section 5.2 and 5.3 indicate that the methods

explain a significant amount of the relationship between FPI and its explanatory variables. It is in the light of these findings that the author views the results from the fixed effects, pooled OLS, FMOLS and the dynamic GMM as reliable and concludes that they should form the basis upon which the final conclusions are made.

5. 4 CHAPTER SUMMARY

This chapter dealt with main data analysis using panel methods (random effects, fixed effects, pooled OLS, FMOLS, dynamic GMM) to address the objectives discussed in the introductory chapter. These objectives were twofold: firstly, to study that factors that determine FPI in emerging markets and secondly, to determine whether the complementarity between financial development and trade openness enhances positive or negative FPI.

According to section 5.2 (main data analysis), explanatory variables that were found to have a significant influence on FPI under at least one econometric estimation approach included the lag of FPI (dynamic GMM in all the three models), financial development, trade openness, the interaction between trade openness and financial development, exchange rates, human capital development, economic growth, savings and inflation. Only infrastructural development and FDI were found to have no significant impact on FPI in any of the three models across all the econometric estimation methods.

Specifically, the following results were observed from section 5.2 (main data analysis). All three models showed that FPI had a significant positive influence on FPI under the dynamic GMM approach. Financial development, economic growth and trade openness were found to have a significant influence on FPI in model 1, 2 and 3 under the random effects, fixed effects and FMOLS approaches. The same econometric estimation techniques showed a significant negative relationship running from the interaction between financial development and trade openness towards FPI in all three models.

Financial development in model 1, trade openness in models 1 and 3, the interaction between financial development and trade openness in model 2 and economic growth in

all three models under the pooled OLS approach had a significant positive influence on FPI. In addition, the pooled OLS method noted that financial development had a significant negative effect on FPI in model 2.

The impact of exchange rates in model 1 under the fixed effects, pooled OLS, random effects and FMOLS was found to be significant and positive yet the same model and econometric estimation procedures showed that savings had a significant negative effect on FPI. The pooled OLS approach in all the three models showed a significant positive relationship running from exchange rates to FPI. The latter was also found to have been negatively but significantly affected by savings in model 2 under the pooled OLS and random effects methods.

The influence of inflation on FPI was significantly negative in both models 1 and 2 under the pooled OLS approach. Moreover, the relationship between FPI and human capital development was found to be significantly positive, running from the former to the latter in models 1 and 2 under both the pooled OLS and the dynamic GMM method. Anchored on the results discussed in this chapter, conclusions, recommendations, contribution of the study, limitations of the research and suggestions for further research are discussed in the next and final chapter.

CHAPTER 6: CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDY

6.1 CHAPTER INTRODUCTION

This is the final chapter of the study hence its major focus is on summarizing the results, drawing conclusions from these results and discussing policy implications for emerging markets. The chapter also highlights the extent to which the results of the study confirm both the empirical and theoretical literature on the factors that affect FPI. The extent to which the research objectives have been addressed by the results of this study is also discussed. This chapter also indicates the contribution made to the literature by the current study, the results of the study and or the research methodology.

The chapter is structured as follows: Section 6.2 is a summary of the findings discussed in line with the literature and results obtained by similar studies. Section 6.3 discusses the literature contribution made by this study. Section 6.4 focuses on the conclusions emerging from the study. It also highlights some implications for policy implemented in emerging markets, given the conclusions of the study. Section 6.5 explains the limitations of the study while section 6.6 suggests areas of focus for further study.

6.2 A SUMMARY OF FINDINGS

In all three models, main data analysis using the dynamic GMM approach showed that the lag of FPI had a significant positive effect on FPI. This result confirms the view in the literature (Barrell and Pain. 1999; Wheeler and Mody. 1992; Saini. 2000) that existing foreign investors attract other foreign investors because of the positive spillovers they generate.

FPI was positively affected by financial development in a significant manner in all the three models under the random effects, fixed effects and the FMOLS. Moreover, a significant positive relationship running from financial development towards FPI was detected in model 1 under the pooled OLS method. The findings echo those of Bartels et al (2009), whose study noted that financial markets improve international mobility of capital because of their ability to avail timely, cheaper and more efficient information to

prospective foreign investors. Model 2 produced results that showed that the financial development impact on FPI was significantly negative under the pooled OLS method, consistent with Gordon and Gupta's (2004) findings.

Trade openness had a significant positive impact on FPI under the FMOLS, random and fixed effects in all three models. Similar results were observed in model 1 and 3 under the pooled OLS approach. These findings support the argument proposed by Dobbs et al (2013) that trade openness does away with any obstacles that might hinder the movement of international capital from one country to another.

The complementarity between financial development and openness to trade was observed to have a significant negative impact on FPI in all the three models under the random effects, fixed effects and FMOLS. These results support Al-Smadi's (2018) view that foreign investors can easily sell off their investments if financial markets are developed and liquid, especially in the presence of high levels of trade openness that facilitates the movement of capital across countries (Dobbs et al. 2013). In contrast, model 2 under the pooled OLS showed that the combination between financial development and trade openness had a significant positive effect on FPI. This finding is in line with literature discussed above in chapter 2, which noted that both openness to trade and financial development separately and individually enhance FPI. The expectation is therefore that the combination of openness to trade and financial development in a particular single country leads to greater FPI inflows.

In model 1, the FMOLS, random and fixed effects showed that exchange rates positively affected FPI in a significant manner, a finding that was also observed in all three models under the pooled OLS approach. This finding supports Haider et al's (2016) argument.

Models 1, 2 and 3 showed a significant positive relationship running from economic growth to FPI under the fixed effects, FMOLS and pooled OLS econometric estimation techniques. Similar results were observed in models 1 and 2 under the random effects approach. These findings support Al-Smadi's (2018) argument on the relationship

between FPI and economic growth. In contrast, the dynamic GMM method showed that the growth of the economy had a significant negative influence on FPI, in support Leong and Wickramanayake (2004) who argued that, in the presence of high levels of economic growth, local investors prefer to buy back domestic securities from foreign investors hence triggering a deleterious effect of FPI inflows.

In model 1, the impact of savings on FPI was found to be significant but negative under the random effects, fixed effects, pooled OLS and the FMOLS approaches. Similar results were shown in model 2 under the random effects and the pooled OLS. These findings run counter to the available literature (Masood and Mohsin. 2002; Abdelhafidh. 2013; Ferreira and Laux. 2009). They are however similar to those of Al-Smadi (2018) who argued that higher levels of inflation wipe out the value of not only return on capital but of the original capital invested. The main data analysis showed that inflation had a significant negative effect on FPI in models 1 and 2 under the pooled OLS estimation method.

Human capital development positively and significantly influenced FPI in both models 1 and 2 under the pooled OLS and the dynamic GMM approaches. This result supports Dunning's (1988) argument that locational advantages have a significant influence on foreign direct investment or any form of foreign investment. Human capital development is a locational advantage of foreign investment in this case, in line with Tsaurai's (2017) findings.

6.3 CONTRIBUTION OF THE STUDY TO THE LITERATURE

From the point of view of the literature on this topic, the contribution of the study is immense. Research work that has investigated the separate influence of financial development on FPI includes Al-Smadi (2018), Bartels et al (2009), Kaur et al (2013), Chakrabarti (2001) and Gordon and Gupta (2004), among others. Their arguments and findings are mixed. Some support the financial development-led positive FPI inflow hypothesis, others argue that financial development negatively affect FPI, while the neutrality hypothesis is also supported in the literature. Alesina and Dollar (2000) and Al-Smadi (2018) are two prominent studies that have explored the influence of openness to

trade on FPI. Their arguments are divergent and conflicting. Some are of the view that openness to trade has a significant positive impact on FPI (Alesina and Dollar. 2000) while Al-Smadi (2018) argues that openness to trade has a deleterious influence on FPI.

There is also literature that argues that developed financial markets are liquid, thus allowing foreign investors to sell off their investments and move their funds, particularly when there is a high level of trade openness (Dobbs et al. 2013). In the light of these studies, the present study predicted that the combination between trade openness and financial development would have a significant negative impact on FPI. No empirical study that the author is not aware of any previous empirical research that studied the effect of this combination between financial development and trade openness on FPI; the current study is the first of its kind to investigate such a phenomenon.

Among the empirical research that explored the determinants of FPI, none have focused exclusively on emerging markets as a bloc of countries. For example, Al-Smadi (2018), Haider et al (2016), Singhania and Saini (2017), Garg and Dua (2014), Badawi et al (2017), Agarwal (1997), Atobrah (2015), Nwosa and Adeleke (2017), Waqas et al (2015), Osemene et al (2018), Nwinee and Olulu-Briggs (2016), Mehar and Hasan (2018), Raghavan and Selvam (2017), Mugableh and Oudat (2018), Chukwuemeka et al (2012), Wortmann (2010), Gumus et al (2013), Adebisi and Arikpo (2017), Kumaraa and Dayaratne (2015), Karim et al (2016), Jothirajan (2018), Ololade and Ekperiware (2015), Aziz et al (2015), Ahmad et al (2015) and Chaudhry et al (2014) focused on Jordan, China, developed and developing countries, India, Saudi Arabia, developing countries, Sub-Saharan Africa, Nigeria, South Asian countries, Nigeria, Nigeria, Pakistan, India, Jordan, Nigeria, South Africa, Turkey, India, Nigeria, Sri Lanka, Pakistan, Malaysia, India, India, Nigeria, Pakistan, China and Pakistan respectively. This study aims to investigate the determinants of FPI in emerging markets, a bloc of nations that has consistently received a significant amount of foreign capital over the last twenty years (Cavusgil et al. 2013).

The study is the first of its kind to assume that the effect of macroeconomic explanatory variables on FPI is not immediate, an argument which was proposed by Matthew and Johnson (2014). This assumption was taken into account as part of checks for robustness of the results.

Empirical studies undertaken to investigate the determinants of FPI such as Al-Smadi (2018), Haider et al (2016), Garg and Dua (2014), Badawi et al (2017), Agarwal (1997), Nwosa and Adeleke (2017), Waqas et al (2015), Nwinee and Olulu-Briggs (2016), Mehar and Hasan (2018), Raghavan and Selvam (2017), Mugableh and Oudat (2018), Chukwuemeka et al (2012), Gumus et al (2013), Wortmann (2010), Adebisi and Arikpo (2017), Karim et al (2016), Kumaraa and Dayaratne (2015), Ololade and Ekperiware (2015), Ahmad et al (2015), Jothirajan (2018), Aziz et al (2015) and Chaudhry et al (2014) ignored the fact that FPI is affected by its own lag and that there could be some endogeneity issues in the FPI function. To be precise, they ignored the dynamic characteristics of FPI. The current study fills this gap.

Among empirical research that have studied the determinants of FPI, only Singhania and Saini (2017) and Atobrah (2015) addressed the endogeneity problem and the dynamic characteristics of FPI data by using the dynamic GMM econometric estimation approach. The current study contributed to the literature by using an approach that took into account the endogeneity issue (dynamic GMM) among other econometric estimation approaches employed to explore the factors that have an impact on FPI in the context of emerging markets.

6.4 CONCLUSIONS AND POLICY IMPLICATIONS

The lag of FPI, financial development, exchange rates, human capital development, economic growth and trade openness were the macroeconomic variables that were found largely to have a significant positive influence on FPI in emerging markets. The implication of the study is that emerging markets are urged to adopt and implement policies aimed at increasing trade openness, human capital development, financial development and economic growth if they intend to enhance the inflow of FPI. They should also implement

policies that ensure that their local currency is not overvalued against the United States Dollar at all times in order to stimulate FPI inflow.

Using the random effects, fixed effects and FMOLS, the complementarity between financial development and openness to trade had a significant negative influence on FPI in models 1, 2 and 3 in emerging markets. This result means that high levels of trade openness allow foreign portfolio investors to liquidate their investments in domestic financial markets and move the proceeds from one country to another. This supports Al-Smadi's (2018) view that was expanded on in the preceding sections. The implication for policy is that emerging markets must develop and implement trade openness policies that strike a balance between promoting access to international markets by local economic agents and preserving the outflow of funds from the domestic economy through speculative activities.

A significant negative relationship running from savings to FPI was observed in: (1) model 1 under the random effects, fixed effects, pooled OLS and the FMOLS and (2) model 2 under the random effects and the pooled OLS approach. Consistent with Haider et al's (2016) observations, models 1 and 2 under the pooled OLS approach also showed that inflation had a significant negative effect on FPI. The implication for policymakers is that emerging markets must implement economic policies aimed at lowering inflation rates if they wish to attract the inflow of FPI.

In all three models and across all five econometric estimation methods used, FDI and infrastructure development had an insignificant influence on FPI. Emerging markets should therefore not waste their efforts in trying to stimulate the inflow of FPI through implementing policies directed at enhancing FDI and infrastructural development.

6.5 LIMITATIONS OF THE STUDY

Limitations encountered in the current study can be categorized into three groups, namely (1) time constraints, (2) financial constraints and (3) unavailability of some data. On the issue of time constraints, the maximum period within which one is allowed by the

University of South Africa to complete a master's degree is two years. The author had to carefully choose the number of objectives and the size and study's in order to ensure completion of the study within the prescribed period. As the author was employed on a full-time basis during the period of the study, striking a balance between studying and work-related responsibilities constrained the quality of the final thesis.

It was noted earlier in the dissertation that the list of emerging markets used is in line with the IMF (2015) report. The full list of emerging markets according to IMF (2015) includes Austria, Belgium, Argentina, Mexico, Bangladesh, Brazil, China, Bulgaria, Chile, Colombia, Hong Kong, Hungary, Greece, Czech Republic, South Africa, Indonesia, Pakistan, Philippines, Malaysia, Poland, Peru, Russia, Portugal, India, Republic of Korea, Singapore, Romania, Thailand, Turkey, Ukraine, and Venezuela. As secondary data were not available, emerging markets such as Austria, Belgium, Bangladesh, Bulgaria, Chile, Hungary, Pakistan, Romania, Ukraine and Venezuela were excluded from the study. Other factors proven by literature to have an influence on FPI could not be included in the general model specification and main data analysis because the secondary data for those variables were either only partially extant or non-existent in publicly accessible international databases.

If the author had had adequate financial resources, the progress of the final dissertation might have been presented at least at one local and or international conference. The rigorous feedback from such conferences would have ensured that the final dissertation was of the highest standard. Constrained financial capacity prevented the author from purchasing some of the secondary data that was crucial to the study from private databases.

6.6 SUGGESTIONS FOR FURTHER STUDY

The current study excluded some emerging markets listed in the IMF (2015) list because the data were not available in public international databases. Future studies should make use of private data and include all the emerging markets listed in the IMF (2015) report; the results of such a study would then be a true reflection of the determinants of FPI in

emerging markets. If data can be accessed from private international databases, more variables and different proxies of the variables could be used in future studies to investigate the same objectives in emerging markets. Tsaurai (2017b) investigated the minimum threshold levels that financial development must reach before triggering significant FDI inflows into emerging markets. Using a similar approach to Kremer et al. (2013), future research should study the minimum threshold levels that independent variables must reach in order to enhance significant inflows of FPI into emerging markets.

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